

# The Chemical Age

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**NOTICES:**—All communications relating to editorial matter should be addressed to the Editor, who will be pleased to consider articles or contributions dealing with modern chemical developments or suggestions bearing upon the advancement of the chemical industry in this country. Communications relating to advertisements or general matters should be addressed to the Manager.

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## International Chemicals

MANY of the comments on the negotiations in progress, and understood to be partially completed, between Imperial Chemical Industries and the German I.G. Farbenindustrie, are obviously influenced by the memory of the proposed agreement between the British Dyestuffs Corporation and the I.G., which was vetoed by the Labour Government just before it vacated office. But the situation has changed in two respects. The Government right of veto no longer exists; the terms now cover an enormously wider field. The British combine is essentially an imperial organisation, with its primary obligation the development and consolidation of chemical and allied interests throughout the Empire. In the case of the earlier proposed dyestuffs agreement it was suggested that it might result in the surrender of British independence to the German combine. We never thought that view justified; but in any case there can be no question of surrender here. It is negotiation on equal terms, great interests on the one side conferring with great interests on the other, as to how they may avoid mutually weakening competition, as to what extent they can pool scientific and technological resources for the common advantage, as to the fair price that either side should pay for the advantages it derives from the other. A vast chemical agreement, representing the British Empire on the one side and Germany on the other, may

be said to dominate the chemical world outside the United States; it might, indeed, be able not merely to meet American competition without fear, but even in certain cases to impose terms. Considering what Anglo-German relations were ten years ago, it is an amazing development, and from most points a hopeful one, equally from the political and from the commercial point of view. The scientific and industrial results that may flow from it are beyond measure. Inspired by the right spirit, it may be a great world force for peace and progress.

To speak of this as a mere exchange of dyestuff patents and research is entirely to mistake its scope and its possibilities. It is a great move in preparation for the enormous chemical developments of which we seem to be on the eve. Chief among these is the attack on the fuel problem. A combination of British and German scientific resources and raw materials would create a commanding position. There are almost equally large prospects in artificial silk, in steel, in explosives, in synthetic fertilisers, in chemicals of every class, and in oil. It is certain that no unit could stand against it with the possible exception of the United States. And how will the corresponding American interests view the situation? In some cases the attitude, we fancy, will not be too favourable. The idea of a great imperial chemical organisation was viewed with some concern. This is a vastly bigger affair. Already we hear of eager inquiries by cable from New York as to what it all means. Sir Alfred Mond might possibly reply that it means Great Britain's resolve to show what British chemical and commercial brains can do not only for the interests they immediately serve but for the world. Perhaps the United States will see that the true line of progress lies in good understanding, and as far as possible co-operation. In any case it would be wise to revise their popular impression that Europe and the British Empire are played out. Sir Alfred Mond's generalship has already made that clear.

## Chemical Fire Extinguishers

IN presenting an account of "Chemical Fire Extinguishers" before the Chemical Engineering Group of the Society of Chemical Industry, Dr. W. R. Ormandy helped to focus the attention of chemists on a very important problem. While the lecture and subsequent discussion ranged over all the available methods, most interest centred round extinguishers of the carbon tetrachloride type and the foam type. In regard to the former, the great importance which attaches to the purity of carbon tetrachloride when used for fire extinction (both from the point of view of non-corrosion of containers and that of the non-production of toxic gases) will probably come as a surprise to most people: and it is interesting and instructive to note the great attention which has been paid, by various fire and

insurance authorities, to this and other essentially chemical points. The physical properties of methyl bromide render its use on the large scale rather difficult; but on the small scale these very properties are a great advantage. In such cases as the risk of fire during the distillation of inflammable liquids in quantities of a gallon or so, Dr. Ormandy recommended the use of a tube containing 25 to 50 c.c. of methyl bromide, sealed with a capillary. On breaking the capillary, the liquid will be sufficiently warmed by the hand to discharge its contents, and this seems a very neat device for the laboratory. The use of foam for fire extinction came in for a good deal of discussion. This, the most modern type of extinguisher, lends itself to effective use in a great variety of ways, and a number of very useful developments of it have been made in the last few years. Great, however, as are the advances already made, it seems likely that with the increase in our knowledge of colloids and surface action still greater things may be expected from it.

### German Chemical Apparatus

VISITORS who wish to study chemical developments in Germany, especially on the mechanical side, will have an opportunity of doing so during the exhibition of chemical apparatus and appliances (*Ausstellung für chemisches Apparate-Wesen*) to be held at Essen from June 7 to June 19, and simultaneously of looking in at the principal conference of the association of German chemists, *Verein Deutscher Chemiker*. This is the fifth of these exhibitions, the former four having been held at Hanover, Stuttgart, Hamburg, and Nürnberg under the name "Achema." The general object is to demonstrate the enormous development in technical apparatus that has taken place in recent years, and we understand that apparatus for the chemical treatment of carbon will have special attention. The exhibition will occupy five halls in the Norbertstrasse, and about 200 leading firms are co-operating in a representative show of chemical apparatus, machinery, and auxiliary appliances. Four-fifths of the available space had been taken some time ago, and there is every reason to expect a collection fairly illustrative of German activity in this field. The conference of the Association of German Chemists will add to the interest of the occasion, for this organisation represents some 10,000 members, estimated to be about four-fifths of the total number of German chemists.

In connection with this exhibition and conference there has been issued the *Achema Jahrbuch* for 1926-27, a report on the position and development of chemical apparatus and plant in Germany (Verlag Chemie G.m.b.H., Berlin, pp. 267, R.M. 10), edited by Dr. Max Buchner. In the introductory portion of the book are a number of messages from eminent German chemists, including Bergius, Bernthsen, Binz, Bodenstein, Franz Fischer, Foerster, Haber, Wilhelm Ostwald, Rassow, Stock, Tammann, Walden, Willstätter, and Zsigmondy. The scientific section of the book contains articles on colorimetry and spectroscopy, the ventilation of chemical laboratories, acid-resistant alloys, the use of aluminium in apparatus, pulverised fuel firing for boilers, and recent advances

in chemical technology and apparatus (by Dr. F. Quincke), among other subjects. The industrial chemical section has articles on new optical apparatus for the chemist (by Dr. W. Ewald), new instruments for the technical chemical laboratory, half-shadow polarimeters, a new electrical oven for temperatures up to 1,450°, nephelometry, micro-colorimetry, modern industrial laboratories, new porcelain products, Prodorite, fire- and acid-resistant products, non-rusting steels, intensive sulphur acid production system, and other important matters. Finally there is an alphabetical list of apparatus which will be exhibited at "Achema V," with space for notes. The volume indicates the very wide range of German chemical apparatus and plant, and contains many new products worth noting.

### An American Tariff Action

ARISING out of the effects of the Fordney Tariff, an interesting case has recently been occupying the attention of the United States courts. By the flexible provisions of the Fordney Tariff, the original rates may be increased or decreased by 50 per cent. on the recommendations of the Tariff Commission. The latter, in cases where low foreign production costs are put forward as a justification for higher tariffs, has attempted to obtain, from U.S. representatives abroad, information (from the books of foreign manufacturers) on this point. In the present instance, it appears that in 1923 the Commission commenced an inquiry into the cost of production of sodium nitrite by the Norwegian Nitrogen Products Co. The Norwegian company wished to cross-examine the Commission's agents at the public hearing, and to obtain publication with regard to the U.S. producers' cost figures. The Commission refused to sanction this procedure, giving as its reason, with regard to the latter point, the fact that the cost figures were trade secrets.

Failing to obtain satisfaction with regard to the matter in the District of Columbia Supreme Court, the Norwegian Co. then appealed to the Court of Appeals of the District of Columbia. While the appeal was pending, the Commission completed its report and communicated its findings to the President of the United States, who thereupon proclaimed an increased duty on imported nitrite. The Columbia Court of Appeals held the case moot, in view of the President's action, and the case was then carried to the United States Supreme Court. The latter recently issued its decision in the matter, stating that the case was moot before the decision by the Court of Appeals, and that therefore the Supreme Court declined to go into the issues originally involved. As a result, the Norwegian company's action fails, and the principle appears to be established that the President's discretion to vary the tariff within the fixed limits, since it is a constitutional power conferred on him, cannot be challenged.

### The American Chemical Exposition

THE arrangements for the eleventh Exposition of Chemical Industries to be held from September 26 to October 1 next at the Grand Central Palace, New York City, indicate a very wide interest in the history of the industry, particularly in the new chemical products which will be exhibited for the first time. The

past year, 1926, brought out the following contributions to industry by American chemists. It has been shown that silicon can replace tin as a hardening agent for copper and is already in considerable use for this purpose. A new and rapidly expanding use for chlorine has been developed in the production of ethylene glycol, which may replace glycerine in many applications. About forty new azo-colours have been developed in American research laboratories during the past year and placed on the market by dyestuff manufacturers. These are only a few of the chemical and scientific developments. Chemical research has produced cheap oxygen, and the pyroxylin lacquers increase in production following the development of "low viscosity" pyroxylin, a product which may be used in sufficient concentration in a lacquer to build up a reasonably thick film with the customary two-to-four coats. At the various sections of the exposition many other new developments will be exhibited, and these in connection with the various papers to be presented to the students' course will give a special interest to this year's exposition.

### British Celanese

ALTHOUGH the controversy as to the future management of British Celanese, Ltd., is small compared with the projected I.C.I. developments, it is nevertheless a matter of some interest to the chemical industry. The company's product, chemically and in every other way, is recognised as among the best of its class; it has built up an important dyestuffs organisation, which both produces and applies the dyes required, while other organisations have specialised in the production of colours for Celanese material; Dr. Henry Dreyfus, one of the two brothers who are now understood to have acquired a controlling interest in the British company, is a good type of the scientific director, being a chemist with high qualifications and adequate business qualities; the American and the Canadian companies appear to be moving ahead strongly, and it would be satisfactory to see the British company, after going through some troublesome stages, reach a secure and prosperous position. The business appears to be at present a battleground between contending interests, and that is certainly not good, except in so far as it may lead to a more clearly defined position in the future.

### Old London Tours

PARTICULARS are published in this issue of arrangements for a series of half-day tours of Old London, starting every Thursday from Bouverie House. These tours will be in charge of Mr. Allen S. Walker, one of our first authorities on the history and antiquities of London, and readers of THE CHEMICAL AGE and any relatives and friends will be able to join the parties without cost on application to the editor of THE CHEMICAL AGE. The parties will assemble at Bouverie House at 2.45 p.m., and return about 5.30 for a cup of tea. The programmes will include some of the most interesting spots in Old London, and Mr. Walker's knowledge of London and his gift of description will make them all that a pleasant city ramble should be.

During the holiday season especially, when readers and their families are in London, it is hoped that the tours will add a welcome item to the holiday enjoyments. The first tour will be on Thursday, June 23, and the particulars given of the first three will supply some idea of their scope and character. In applying for tickets, it is desirable to give more than one date, in the event of the available accommodation on any particular date being exceeded.

### British Chemical Abstracts

THE Index for 1926 of *British Chemical Abstracts*, issued by the Bureau of Chemical Abstracts, representing the Chemical Society and the Society of Chemical Industry, is a volume of 430 pages, and its value to the research chemist and indeed to the student of scientific literature generally can hardly be over-estimated. The index covers the abstracts of papers in pure chemistry and in applied chemistry and also contains a list of journals from which abstracts are made and index of numbers of patents abstracted. The index of authors occupies the first 158 pages, and the index of subjects 257. The Chairman of the Bureau (Professor Philip), the editor (Mr. T. F. Burton), and all their associates deserve the warmest recognition for the painstaking and scholarly way in which this invaluable service to chemical literature is discharged. The work is published from the offices of the Bureau, Central House, 46, Finsbury Square, London.

### Books Received

- OIL AND RETORTABLE MATERIALS. By George W. Halse. London Charles Griffin and Co., Ltd. Pp. 146. 7s. 6d.  
LUBRICATION AND LUBRICANTS. By Leonard Archbutt and R. Mountford Deeley. London: Charles Griffin and Co., Ltd. Pp. 650. 36s.  
REPORT ON THE INDUSTRIAL, COMMERCIAL, AND FINANCIAL SITUATION IN POLAND, 1926. By R. E. Kimens. Department of Overseas Trade. London: H.M. Stationery Office. Pp. 44. 1s. 6d.  
HANDBOOK OF PHOTOMICROGRAPHY. By H. Lloyd Hind and W. Brough Randles. London: George Routledge and Sons, Ltd. Pp. 295 and 44 plates. 16s.

### The Calendar

May 18	Society of Glass Technology. 2.30 p.m.	London.
18	Chemical Society: Faraday Lecture by Professor Richard Willstätter. 5.30 p.m.	Royal Institution, 21, Albemarle St., Piccadilly, London.
18	Institute of Chemistry (Belfast Section): Annual General Meeting.	Royal Belfast Academical Institution.
18	Electroplaters' and Depositors' Technical Society: "Protective Effects of Metal Deposits." S. Wernick. 8.15 p.m.	Northampton Polytechnic Institute, St. John Street, London, E.C.1.
18	Electrolux, Ltd., Inauguration of Works at Luton. Opening Ceremony by Rt. Hon. Sir Robert Horne.	Luton, Beds.
18	Royal Society of Arts: "Industrial Welfare in Great Britain and the United States." Robert R. Hyde. 8 p.m.	John Street, Adelphi, London.
19	Chemical Society. 8 p.m.	Burlington House, Piccadilly, London.
19	Society of Chemical Industry (Nottingham Section): Visit to works of Gerard Brothers. 2.45 p.m.	New Basford, Nottingham.
19	Royal Society. 4.30 p.m.	Burlington House, Piccadilly, London.
20	Royal Institution of Great Britain: "The Structure of the Silicates." Professor W. L. Bragg. 9 p.m.	21, Albemarle Street, Piccadilly, London.



## Chemical Engineering Group

### Annual Meeting and Paper on Fire Extinguishers

THE annual general meeting of the Chemical Engineering Group of the Society of Chemical Industry was held in the staff common room at the Imperial College Union, South Kensington, London, on Friday, May 6. Mr. F. H. Rogers (chairman of the Group) presided.

The report of the hon. secretary, Mr. A. Talbot, and the accounts and balance sheet submitted by the hon. treasurer, Mr. H. Pooley, were adopted, votes of thanks being accorded to both gentlemen. The following were elected to fill vacancies on the committee: Major F. V. Gloag, and Messrs. P. Parrish, D. Rider, H. Talbot, and A. J. V. Underwood. The following honorary officers were appointed by the committee to serve during 1927-28: chairman, Professor E. C. Williams; hon. treasurer, Mr. F. A. Green; and hon. secretary, Mr. H. J. Pooley.

#### Dr. Ormandy's Paper

Following the annual meeting, an ordinary meeting was held at the Royal School of Mines, when Dr. Ormandy read a paper on "Chemical Fire Extinguishers." The basic means employed for fire fighting, said Dr. Ormandy, were comparatively few in number. First, and most important, came the use of water, which was regarded mainly as a means for reducing the temperature at the source of the fire. In the second class were those bodies which were employed for the production of large bulks of preferably heavy vapours which smothered the fire by preventing access of oxygen or by reducing the oxygen content of the gases surrounding the fire. A third means was the application of solid materials, such as sand, earth, or preferably bodies which gave off non-inflammable gases when heated. The fourth and most modern method was the foam method. Dr. Ormandy dealt only with the portable or hand means for fighting fires in their incipient stages.

In the first class the various forms of "S and A" appliances (soda and acid) were among the best known. A solution of bicarbonate of soda was contained in a pressure-resisting vessel, and sulphuric acid was contained in an internal vessel, which, at desire, could be caused to mix with the bicarbonate of soda solution, thus generating carbon dioxide, the pressure so produced serving to eject the liquid in a powerful stream. Such appliances were worse than useless in the case of fires of electrical origin, for the liquid, containing large quantities of sodium sulphate, was an excellent conductor of electricity.

#### Carbon Tetrachloride and Tetrabromide

It would not be unreasonable to rename the second group the "Carbon Tetrachloride Group," since, although other bodies were used to some extent, carbon tetrachloride was used in the overwhelming majority of cases. What was required was a material which would produce from a given bulk of liquid the maximum quantity of a vapour which was heavy, non-combustible, and as stable as possible to heat and the chemical conditions arising in a fire. Having regard to the price, carbon tetrachloride had been found to fulfil the required conditions better than anything else. The chemist was often astonished to find that in industrial processes chemicals were frequently required of a degree of purity even greater than he was accustomed to use in the laboratory. This was particularly true of carbon tetrachloride for use in fire-extinguishing appliances. The commercial product was always liable to contain carbon bisulphide and traces of moisture, and both of these were immensely active in bringing about metallic corrosion. It was only by the use of  $\text{CCl}_4$  of an extraordinary degree of purity that it was possible to get fire appliances filled with this product which, after ten or fifteen years of inaction, were found to be in perfect condition.

A very excellent fire extinguishing medium was methyl bromide. It was, however, expensive, and owing to the low boiling point, very difficult to retain for any length of time in anything other than sealed vessels. Owing to the low boiling point, the material ejected itself under pressure from the vessel in which it was contained. Small glass tubes with capillary ends, filled with methyl bromide, were wonderfully efficacious in the laboratory for the extinction of small fires arising from the breaking of flasks during the distillation of volatile inflammable liquids. The high price and the difficulties mentioned,

however, were likely to militate against its introduction on any considerable scale.

Coming to the third group, he pointed out that the utilisation of solid materials, such as dried sand, was possible only under limited and special conditions. In the first place, it was obviously only possible where the fire was at a low level. Finely divided powders were certainly better than water to apply to petrol, paraffin and tar, or inflammable liquids generally, unless the water supply was available in overwhelming quantities, or could be used as steam in enclosed places.

#### Foam Extinguishers

The fourth class, the utilisation of a foam blanket consisting of very stable bubbles containing  $\text{CO}_2$  was comparatively modern, and was a most interesting application of the laws of surface adsorption. In essence, the process consisted in bringing together a solution of bicarbonate of soda and a solution of aluminium sulphate, which led to the evolution of  $\text{CO}_2$  and the setting free of colloidal alumina. To this solution certain organic materials were added, such as liquorice or saponin, which bodies acted as stabilisers. In the earlier forms of instruments, bicarbonate of soda and the aluminium sulphate were in two separate packets, and the remaining material was generally applied in solution in a tin. Later, the organic matter in a solid, finely-divided form mixed with the bicarbonate of soda formed one charge, and the aluminium sulphate the other. The latest advance was by the utilisation of processes which could be adapted to an existing water supply, and which would give a continuous discharge of foam so long as the necessary dry admixture of chemicals was supplied to the plant. In effect, a mixture of finely divided and very dry bicarbonate of soda and aluminium sulphate with the organic foam stabiliser was fed into a water supply at a rate proportional to the rate of water flow, and foam thus produced in the water circuit itself. The foam was now made having such physical characteristics that it would adhere to vertical surfaces, and the duration of the foam was much greater than was obtainable a few years ago.

During the discussion, Mr. H. W. James referred to a complete fire foam installation at a tar works. There were two danger areas, the tar distillation area and the naphtha distillation area. There was an installation giving 2,000 gallons of each type of solution, making 4,000 gallons, capable of producing over 30,000 gallons of foam. Foam could be projected on to any portion of the danger area from at least two points, and sometime three. An advantage of the foam method was that a limited number of men was required to apply it. When water was used, many men were required to connect hoses, work pumps, and perform all the other necessary duties. In the case of the foam installation referred to, only three men were required, one at the pump and one at each of the two hoses, directing the foam streams. That was an advantage when there was a limited number of men on duty. The insurance companies were favourably impressed with the installation—so much so that a rebate was allowed on the premiums; but the insurance companies insisted, very wisely, upon having a monthly certificate showing the amount of foam produced by mixing the solutions in the right proportions.

#### A New Low Temperature Carbonisation Process

A PLANT for commercial scale low temperature carbonisation by a new method is being erected by the Leeds Fireclay Co., of Wortley, which has secured the British rights of the Plassmann process. It is stated that the process, a German one, differs from others in that continuous operation is secured, while at the same time the coal remains absolutely stationary and compressed during the operation. This entails low operating costs and secures a good lumpy coke. The yield of by-products is said to be the maximum obtainable, and the quality as good as that of any other process. At the moment there is in course of erection the first of a battery of eight Plassmann ovens each capable of dealing with 50 tons of coal a day.







## Society of Public Analysts

### Abstracts of Papers

AN ordinary meeting of the Society was held at the Chemical Society's Rooms, Burlington House, London, on Wednesday, May 4, Mr. E. Richards Bolton (president) being in the chair.

Certificates were read for the first time in favour of Messrs. C. E. Corfield, B.Sc., F.I.C., H. E. C. Powers, B.Sc., A.I.C., J. D. Rogers, and Abraham Samson, A.R.C.Sc., A.I.C.; and for the second time in favour of Messrs. F. C. Bullock, B.Sc., A.I.C., T. H. Fairbrother, M.Sc., F.I.C., R. S. Rack, and S. G. Sherman.

The following were elected members: Messrs. A. G. J. Lipscomb, B.Sc., A.I.C., W. L. Matthews, S. J. Rogers, B.Sc., F.I.C., E. F. Waterhouse, H. W. Webb, and A. S. Wood, M.Sc., Ph.D., F.I.C.

### Analysis of the Rare Earths

In their investigations into the analytical chemistry of tantalum, niobium, and their mineral associates, W. R. Schoeller, Ph.D., and C. Jahn dealt with the precipitation of tungstic acid by tannin and the separation of tungsten from tantalum and niobium. Small quantities of tungstic acid, it was stated, were quantitatively recovered from tungsten solutions containing alkali chloride by precipitation with tannin and cinchonine hydrochloride. A method of determining small amounts of tungsten in the presence of large amounts of earth acids had been based on this principle. Small amounts of earth acids in tungstic trioxide were determined by fusing the mixture with sodium hydroxide and treating the fused mass with sodium chloride solution; sodium tantalate and niobate remained undissolved.

In a paper on "The separation of vanadium and tungsten," by S. G. Clarke, B.Sc., A.I.C., it was shown that vanadium might be determined in the presence of large amounts of tungsten by precipitation with cupferron (ammonium salt of nitroso-phenyl hydroxylamine) after treatment of the solution with hydrofluoric acid, neutralisation with ammonia, addition of hydrochloric acid, and dilution. The precipitate was separated, washed, and ignited at a low temperature, the residual vanadium pentoxide dissolved in dilute sulphuric acid, and the solution reduced with sulphur dioxide and titrated with permanganate.

"The determination of moisture by the volatile solvent method" was described by J. M. Jones and T. McLachlan, A.I.C. This method of determining moisture was said to be satisfactory for emulsions, such as butter and margarine, and gave more consistent results than any other method for such products as jam, honey, and malt extract, though it was not possible to say whether these results were accurate. For powders which did not cake, the water-oven and air-oven method was preferable. The use of toluene as a solvent enabled the results to be obtained in a shorter time than when benzene or petroleum spirit was used.

### A Quantitative Reagent for Vitamin A

F. Wokes, B.Sc., F.I.C., and S. G. Willimott, Ph.D., B.Sc., A.I.C., in their paper on "A study of antimony trichloride as a possible quantitative reagent for vitamin A," suggested that the reaction between antimony trichloride and vitamin A was probably due to condensation, and could be retarded by dehydration of the solvent. The depth of the initial blue coloration obtained under standard conditions might be used to measure the vitamin A content of the oil. The intensity of colour was expressed in Lovibond blue units 30 seconds after mixing the solution of the oil and reagent.

New processes for the determination of certain elements in lead were described by B. S. Evans, Ph.D., F.I.C. The sample was dissolved in nitric acid, the lead separated as sulphate, and the arsenic precipitated with sodium hypophosphite and separated by shaking with benzene and filtering. Antimony was determined in the filtrate, and the arsenic in the precipitate was determined by an iodimetric method. Bismuth was determined colorimetrically with potassium iodide, after separation of the lead as sulphate and chloride, and sulphur was determined gravimetrically after dissolving the metal in *aqua regia*, evaporating the solution to dryness, and dissolving the residue in dilute hydrochloric acid.

## Old London Highways and Byways

### Half-Day Rambles from Bouverie House

READERS OF THE CHEMICAL AGE, their relatives and friends, will shortly have offered to them an exceptional opportunity of participating, without cost, in some of the most interesting visits to historic places in Old London ever organised. Whether they are up on holiday from the country or have a half-day free in town, the arrangement will equally appeal to them. Bouverie House, the new headquarters of THE CHEMICAL AGE and its associated journals and publications, is situated in the main thoroughfare of the historic square mile which constitutes the City of London; it is in the district most closely associated with Dr. Johnson, and adjoins his house; between the Law Courts on the west and the Mansion House on the east it is surrounded with monuments, and spots, and places teeming with historic interest. It is something in the nature of a reflection upon us as a people that while we are prepared to make laborious journeys to Paris or Brussels or Rome, and spend our time enjoying the artistic and historic treasures in those places, we do not sufficiently acquaint ourselves with our own treasures, which, often exceeding in real interest anything that is to be found abroad, should have for us the added interest of being our own.

Mr. Allen S. Walker, a lecturer in connection with the London University, is the recognised expert on the treasures of the City of London, and a walk round London in his company is an experience which those who have enjoyed it will never forget. Arrangements have been concluded with Mr. Walker for bringing this pleasure within the reach of our readers and their families. It is proposed that on Thursday afternoons, starting on June 23, those who desire to join the party should assemble in the Publications Hall, Bouverie House, at 2.45 p.m. to meet us and Mr. Walker, and then to take a tour of the neighbouring City under Mr. Walker's guidance; the tour ending up at Bouverie House at 5.30 p.m., where a cup of tea will be served in the Staff Canteen.

In announcing this new plan we have to ensure that the party shall not be more numerous than is convenient from Mr. Walker's point of view, or too big to make it possible for each of them to benefit by his explanations and descriptions. Our readers should therefore apply to the editor of THE CHEMICAL AGE at least a fortnight prior to their intending visit for tickets for the party on the day which they select. Any Thursday will do.

As an example of the scope and character of the rambles we give below the programme for the first three tours:—

#### THURSDAY, JUNE 23.

*The Temple.*—Temple Church (XII-XIII century), Middle Temple Church, Inner Temple Church (associations with Chaucer, Shakespeare, Dr. Johnson, Goldsmith and Dickens).

#### THURSDAY, JUNE 30.

*St. Clement Danes (Dr. Johnson's Church).*—No. 17, Fleet Street (XII century), Old Curiosity Shop (escaped fire of 1666), Dr. Johnson's House, Gough Square.

#### THURSDAY, JULY 7.

*St. Bride's Church, Fleet Street (the printers' church).*—Bridewell Palace remains, the River Fleet, *Daily Telegraph* or *Daily Mail* offices.

### Voluntary Liquidation of Paint Manufacturers

THE creditors of Chas. Orme and Co., Ltd., paint, varnish, and polish manufacturers, of 29A, Hill Street, London, S.E.15, were called together on Friday, May 6, at the Institute of Chartered Accountants. The chair was occupied by Mr. J. Hamp, who stated that the company had gone into voluntary liquidation and had appointed him to act as liquidator. The statement of affairs presented showed liabilities of £6,747 5s. 2d., of which £5,956 7s. 10d. was due to the trade and £790 17s. 4d. to cash creditors. After allowing £140 11s. 9d. for preferential claims, the net assets were £1,853 3s. 3d., or a deficiency so far as the creditors were concerned of £4,894 1s. 11d. It was decided that the voluntary liquidation of the company should be continued with Mr. Hamp as liquidator, and an advisory committee, consisting of the representatives of the Methylating Spirit Co., and Manser, Ltd., was appointed to assist him in attempting to sell the business as a going concern.



## "Are Capitalists Overpaid?"

Debate between Sir Ernest Benn and  
Mr. J. Maxton, M.P.

THE first of a series of lectures and counter-lectures in aid of King Edward's Hospital Fund for London was held at the London School of Economics on Tuesday, when Sir Ernest Benn, the author of *The Confessions of a Capitalist*, debated with Mr. James Maxton, M.P., the Chairman of the Independent Labour Party, the question "Are Capitalists Overpaid?"

Mr. Maxton said that he would much prefer to have debated the question "Should Capitalists be Abolished?" On the assumption, however, that capitalists were going to continue in existence, it should be obvious that they were overpaid. We had throughout this and every other country a great number of people rendering really valuable services—the baker, the shipbuilder, the house-builder, and other people, who produced the things we needed in our daily lives, paid on a scale ranging from £2 to £5 a week. These were the people who did the necessary manual labour of the community. Then there were the social services—those of the teacher, the street cleaner, the clerk in our public offices. A man or woman getting £8 a week in any of these services was being highly remunerated. If we took some other professions, for instance, politics, "the noblest and most honest of them all," said Mr. Maxton amid laughter, the Prime Minister, received £5,000 a year. The army, the navy, the judiciary, and the Church were remunerated on a proportionate scale. All these people were paid fixed salaries, generally known and publicly voted. If all these persons were to be paid at these rates, who was this capitalist fellow and what kind of services did he render that he should be paid not £5,000 or £3,000 a year, but in hundreds of thousands? What did he do? What did he give us that required such high pay? A man came to a capitalist, propounded a scheme, and asked the capitalist to find money for it. The capitalist told him he must have a week to consider it. He then turned it over to a confidential employee and went off to Epsom or Monte Carlo—where he did understand the business transacted. On his return he was advised as to the practicability of the scheme. If he were advised to finance it, he put up the money, sat back in his chair, and expected interest on his investment. Was it worth it to the community? It was worth it to the capitalist, but was it to anyone of the community generally? The capitalist's wealth came out of the labour of other people.

Sir Ernest Benn said the answer to the question before them was "Yes" and "No." Capitalists were many of them much overpaid. First of all, however, it was necessary to define a capitalist, which Mr. Maxton had omitted to do. He suggested that a capitalist might be defined as one who, being in a superior position, was able to rob the rest of the community. Mr. Maxton assented, and the first gang of capitalists that occurred to Sir Ernest as coming within that definition were the 59,000 bricklayers, and the 17,420 men with a monopoly of plastering, the still smaller number of makers of building materials, and the rings of merchants, a gang which, by reason of the 390 Acts of Parliament for which Mr. Maxton and his fellow politicians were responsible, and by reason of Trade Union and other restrictions, was able to get on with the work of building one house per family per century. They could not do more, and goodness knows they could not do less. Who were the capitalists that Mr. Maxton was thinking about? Go first to the banks. They would find that the owners of the banks had an average of £219 apiece in the Big Five. Take the insurance companies. The capitalists behind them had an average of £157 apiece. The big London stores groups were owned by folk with an average capital of £206 apiece. So that a good average capitalist had an investment of £200 in one or other of those useful undertakings. It took about £1,000 of capital to employ the average worker, £1,500 in the case of a railway man, in buildings, machinery and equipment, the materials of work. Taking the whole group of undertakings he had mentioned, it would be readily seen that there were five capitalists to each worker, and the remedy, if the capitalist were overpaid or the worker underpaid, was to find more capitalists. If Parliament and the Government departments and the bureaucrats had been given a ten years' holiday at the end of the war, and the £10,000 millions paid to them since that

time had been invested in the way in which the money had been invested in banks and insurance and stores, the simplest calculation would show that in the ten years since the war we should have arrived at that stage expressed by Joseph Chamberlain as "two jobs for one man," when any worker could get any price he liked and no capitalist could get one per cent. for his money, however hard he tried. Capital, concluded Sir Ernest, was essential. The only remedy for Mr. Maxton's trouble was to provide more capital—more private capital. He claimed that if the principles for which he stood had been allowed to prevail, the New Jerusalem for which Mr. Maxton pleaded so eloquently would have been here with us to-day. But the New Jerusalem was a building job, and building required capital, goodwill, and work.

## Chemical Matters in Parliament

### Dye in Fish

Mr. Johnston (House of Commons, May 2) asked whether the attention of the President of the Board of Trade had been drawn to recent instances where herrings treated with dye had been sold as kippers. Lt.-Col. Guinness (Minister of Agriculture and Fisheries), who replied, said he was aware that it was the practice of some curers to use dyes for improving the appearance of herrings sold as kippers, but there was no power to prevent this practice unless the colouring material used were injurious to the health.

Mr. Wolmersley asked if Mr. Johnston was aware that the dye was only a vegetable dye not in any way injurious and, in fact, it improved the appearance of the article.

### Sulphur Dioxide Preservative

Replying to a question by Mr. Herbert Williams (House of Commons, May 2), whether the attention of the Minister of Health had been drawn to the decision of the Board of Health in Scotland to allow the use of sulphur dioxide as a preservative for minced butcher meat during the months of June, July, August, and September in any year; and whether, having regard to the higher average temperature in England and Wales, he would consider introducing the same Regulations, Sir K. Wood (for the Minister of Health) replied that the Minister of Health was aware of this decision but as at present advised did not propose to modify the Regulations as issued in regard to meat. In reply to a further question as to why, when there was a higher temperature in England, it was necessary to have more stringent Regulations in England than in Scotland, he stated that he understood special arrangements had to be made in Scotland.

### Liquidation of the Rayon Company

Replying to a question, Mr. Winston Churchill (House of Commons, May 5) stated he was not aware of the causes which led to the liquidation of the Rayon Artificial Silk Co., Ltd., but the information available did not support the suggestion that the liquidation was due to the action which the Commissioners of Customs and Excise found it necessary to take to safeguard the interests of the Revenue.

### Oil Extraction from Coal

Mr. Thurtle (House of Commons, May 5) asked the Secretary for Mines if his Department possessed any information as to whether the extraction of oil from coal was being carried out on a commercial basis in Germany. The Duchess of Atholl, who replied, said that there were several methods of extracting oil from coal. Tar from which oils were produced was obtained commercially in gas works in Germany as in this country. Low temperature carbonisation processes had long been employed for the extraction of oil from brown coals in Germany. It was understood that oil was now also being produced commercially in Germany by the hydrogenation of brown coal.

Mr. Paling asked whether three years ago a report was issued by the Fuel Research Station to the effect that the question was approaching the point when it would be a commercial success in this country. What was the reason it had made no headway recently? The Duchess asked for notice of the question.

Mr. Hardie asked if she was aware of the fact that low temperature was not a commercial success only because the vested interests in this country prevented its development.

## From Week to Week

THE SOCIETY OF CHEMICAL INDUSTRY IN BASLE proposes to pay a dividend of 15 per cent. for the year 1926. This is the same rate as in the previous year.

THE ENGLISH CHINA CLAYS SALES CORPORATION (exclusive American representatives of English China Clays, Ltd.) has changed its address to 551, Fifth Avenue, New York City.

A LIMITED NUMBER of self-registering rain gauges with 8 in. square receivers and with dial showing up to 10 in. of rain, is being offered by A. Gallenkamp and Co., Ltd., 19-21, Sun Street, Finsbury Square, London, E.C.2.

SIR JOHN RUSSELL, director of the Rothamsted Experimental Agricultural Station, will be one of the speakers at the annual convention of the American National Fertiliser Association, which will be held at White Sulphur Springs, West Virginia, in the week beginning June 6.

PORTRAITS OF SCIENTIFIC INTEREST at the Royal Academy (in addition to that of Professor H. E. Armstrong, F.R.S., mentioned last week) include those of Professor J. N. Collie, F.R.S., by Arthur T. Nowell (No. 611), and of Professor J. A. Fleming, F.R.S., by Sir William Orpen (No. 723).

THE NORTHWICH URBAN COUNCIL has decided to apply to the Ministry of Health for sanction to obtain a loan of £96,000 for the payment of advances to Brunner, Mond and Co., in respect of a scheme for the provision by that firm of 233 workmen's houses which are to be completed by September.

THE DIRECTORS of Sensible Heat Distillation, Ltd., are offering a scholarship of £250 a year to the Imperial College of Science, South Kensington, for the study in the Department of Fuel Technology of matters concerning the investigation of primary oils from British bituminous coals, under Professor W. A. Bone, F.R.S.

A GENERAL MEETING OF THE MEMBERS of the Royal Institution was held on Monday, Sir Arthur Keith, Treasurer and Vice-President, in the chair. Sir J. J. Thomson was elected Honorary Professor of Natural Philosophy and Sir Ernest Rutherford Professor of Natural Philosophy. Sir Robert Robertson was among those nominated as vice-presidents, and Sir Arthur Duckham was elected a member.

ROTHERHAM FIRE BRIGADE STOOD BY FOR THREE HOURS at the South Yorkshire Chemical Works, Parkgate, recently, a serious conflagration with the possibility of a disastrous explosion being feared. A tar still became over-heated and burst, causing considerable damage, and because of the proximity of the benzol house far more serious trouble was feared. Fortunately, the damaged still cooled off and there was no fire.

A MEETING of the shareholders in the Amalgamated Anthracite Collieries, Ltd., was held, by direction of the Railway and Canal Commission, to consider the scheme of amalgamation with the United Anthracite Collieries, Ltd., etc., on Tuesday. Sir Alfred Mond presided. The scheme provides for the increase of capital to £5,000,000, and the taking over of the entire assets of the United Anthracite Collieries, Ltd., and other companies. Shareholders in the United Anthracite Collieries are to exchange their shares for an equal number in the Amalgamated Anthracite Collieries, Ltd. The scheme was unanimously approved.

MR. AND MRS. J. S. WILLIAMS-THOMAS, of Stourbridge, have been the recipients of warm congratulations upon their golden wedding. Mr. Williams-Thomas became associated with the firm of Stevens and Williams, Ltd., glass manufacturers, of Brierley Hill, 63 years ago. He is also chairman of the New English Glass Manufacturers, Ltd., Dudley Port, and was the first chairman of the British Flint Glass Manufacturers' Association. In various capacities he has been associated with the Pottery and Glass Traders' Benevolent Institution, more recently as one of its trustees, and joined the board of the Worcester Royal Porcelain Co., Ltd., some 16 years ago. Mr. Hubert Williams-Thomas, a son, has just completed 30 years' association with the glass trade.

APPLICATIONS ARE INVITED for the following appointments: Fellowships (Salters' Institute of Industrial Chemistry) for chemists of post-graduate standing. The Director, Salters' Institute of Industrial Chemistry, Salters' Hall, St. Swithin's Lane, London, E.C.4. June 1.—Grants-in-aid to young men and women (17 years of age and over) employed in chemical works in or near London. The Director, Salters' Institute of Industrial Chemistry, Salters' Hall, St. Swithin's Lane, London, E.C.4. June 10.—Professor of Organic Chemistry in Indian Institute of Science, Bangalore. Dr. M. O. Forster, c/o Jeremiah Lyon and Co., 4, Corbet Court, London, E.C.3. June 29.—Sir Clement Roys Memorial Scholarship in Chemistry in the University of Manchester, for research and advanced study, open to inhabitants of the County of Lancaster, preference being given to the County Borough of Rochdale. The Registrar. June 1.—Lecturer in Physical Chemistry in the University of the Witwatersrand, Johannesburg, South Africa. The Secretary, Office of the High Commissioner for the Union of South Africa, Trafalgar Square, London, W.C.2. June 1.

THE SANDOZ CHEMICAL CO. OF BASLE proposes to pay a dividend of 25 per cent., as in the previous year, in respect of the year 1926.

MR. J. E. PURVIS, of Corpus Christi College, Cambridge, has been appointed University Lecturer on Chemistry and Physics as applied to Hygiene.

MANY PEOPLE, CHIEFLY WOMEN AND DEALERS, attended the sale at Roehampton on Monday of the modern and antique furniture and silver and household effects of the late Mr. Roscoe Brunner.

AT A GENERAL MEETING of the Institution of Petroleum Technologists at the house of the Royal Society of Arts, London, on Tuesday, a paper was read on "The Burning of Mineral Oils in Wick-Fed Lamps" by Mr. J. Kewley, F.I.C., and Mr. J. S. Jackson, A.I.C.

A MEETING of the Electroplaters and Depositors' Technical Society will be held on Wednesday, May 18, at Northampton Polytechnic Institute, at 7.45 p.m., when Mr. S. Wernick, B.Sc., will read a paper on "The Protective Effect of Metal Deposits on Iron." Dr. W. H. J. Vernon will preside.

THE LATEST ADDITION to the fine buildings erected and being erected on the Thames side at Lambeth is to be the headquarters of I.C.I. A block of offices capable of accommodating a staff of two thousand persons is now being built near Lambeth Bridge. The building is expected to take two years to complete.

MR. HENRY H. ROBSON has retired from the position of secretary of the Liverpool Nitrate Co. For forty years he was engaged in Liverpool and London in the nitrate section of the business of W. and J. Lockett, South American merchants, and for nearly sixteen years was secretary of the Liverpool company.

THE ADJOURNED PUBLIC EXAMINATION of James Hanby Markham, trading as Watson Walker and Quickfall, Sheepshead Chemical Works, Leeds, manufacturing chemist, etc., and as A. J. Barbour and Co., Sheepshead Chemical Works, Leeds, horticultural chemist, was held on Tuesday, at Leeds. The statement of affairs showed a deficiency of £1,765. The examination was closed.

THE DIRECTORS of the Nunnery Colliery Co., Ltd., of Sheffield, have placed an order with the Woodall-Duckham Vertical Retort and Oven Construction Co. (1920), Ltd., for a complete coke oven works comprising a battery of 25 Becker ovens capable of carbonising 3,600 tons of slack coal per week. The contract includes the erection of semi-direct by-product recovery plant, railway sidings, coal store, coal and coke handling plant, and coke screening plant.

SIR MAX MUSPRATT, speaking at the Economic Conference at Geneva on Thursday, May 5, pointed out the services rendered to the whole world by British trade beyond the seas. He stated that the equilibrium of economic life in Great Britain had been compromised by the decrease in power of purchase throughout the world. He outlined the present difficulties met with by the great industries, notably the iron and steel trades, and said that the conference could count on the unqualified support of the British for any solution promising the re-establishment of economic peace.

SUGAR BEET NEWS.—A meeting of farmers of the Clutha and Otago (New Zealand) districts last week discussed the possibilities of the cultivation of sugar beet in Southern Otago, and decided to write to Lord Weir, of the Anglo-Scottish Beet Sugar Co., Cupar, Fife, asking if the company would consider the establishment of a branch factory in New Zealand.—A revision has been made in the estimates for the acreage of Continental beet sowings for the coming season. The total figure is now reduced from 2,378,500 to 2,367,000 hectares, although Germany is now put at 395,000 hectares against 390,000 as previously estimated. Czecho-Slovakia is reduced from 280,000 to 272,000 hectares, and France from 236,000 to 232,000 hectares. The weather prevailing is reported to be unfavourable to crops.

### Obituary

JOHN CAMPBELL, aged 62, Glasgow manager of Thomson, Ltd., dyers, Perth, suddenly, at 185, Garrioch Road, Glasgow, on Saturday May 7.

PROFESSOR ADOLF MIETHE, of the Berlin Technical College, in Berlin recently at the age of 64. Professor Miethe claimed to have produced gold from mercury atoms, but modern research has done much to discredit this.

WILLIAM HENRY AZOD, a retired analytical chemist, of Leigh Beck, Canvey Island, Essex, on Monday. He was found dead on his bed. A bottle which had contained prussic acid was found near by. At the inquest, on Tuesday, a verdict of suicide during temporary insanity was returned.

DR. GEOFFREY WEYMAN, F.I.C., aged 38, chief chemist to the Newcastle and Gateshead Gas Co., at his home at Hexham, Northumberland. He had been in the service of the Newcastle and Gateshead Gas Co. for 17 years, and was very well-known in the industry. In addition to contributing to technical literature, he published a number of technical books, including *Modern Gasworks Chemistry*. He was a member of the Newcastle Section of the Society of Chemical Industry, and of the North of England Gas Managers' Association. He leaves a widow and three children.

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## Patent Literature

The following information is prepared from published Patent Specifications and from the Illustrated Official Journal (Patents) by permission of the Controller to H.M. Stationery Office. Printed copies of full Patent Specifications accepted may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at 1s. each.

### Abstracts of Complete Specifications

- 268,552. CELLULOSE DERIVATIVES, MANUFACTURE OF. Court-audls, Ltd., 16, St. Martin's le Grand, London; W. H. Glover, South Bank, Warwick New Road, Leamington, and C. Diamond, Sans Facon, Warwick Avenue, Coventry. Application date, April 10, 1926.

Cellulose derivatives suitable for the production of filaments, films, etc., are obtained by acting on alkali cellulose with such a restricted quantity of diethyl sulphate at normal temperature that a homogeneously ethylated cellulose is obtained, which is insoluble in water, weak alkali, and organic solvents, and which contains not more than one  $C_2H_5$  group for every  $C_6H_{10}O_5$  present and not less than 4 per cent. of ethyl. The free alkali is removed and the product dried and treated with an acetylating agent containing acetic anhydride. It is found that the acetylation takes place more readily if the ethyl cellulose is dried until it contains only 2 to 4 per cent. of moisture. The alkali cellulose can be obtained by treating wood pulp with caustic soda solution. The acetylated ethyl cellulose obtained yields a clear solution of high viscosity in acetone, which is particularly suitable for conversion into filaments by the dry spinning process. Some detailed examples of the process are given.

- 268,599. HEATING GRANULAR MATERIALS, PROCESS FOR. J. Y. Johnson, London. From I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. Application date, June 21, 1926.

It has been found that granular materials can be very uniformly heated by electric resistance or arc heating if gases are forced through the material between the two electrodes to maintain it in a state of agitation. The process is particularly suitable for treating material in grains of 1-10 mm. in size and may be used for the continuous production of water gas, or the preparation of carbon disulphide from sulphur and granular coal. In an example, a shaft furnace of square cross section contains a layer of 60 centimetres deep of granular incandescent lignite coke on a layer of granulated fireclay. Two electrodes of steel V2A, 27 by 20 cm. in size are arranged 20 cm. apart, and the coke is kept in agitation by superheated steam at  $250^\circ\text{C}$ . An alternating current of 80 amperes at 380 volts is passed through the coke, which is heated to  $750^\circ\text{C}$ . and water gas is produced. The quantity of steam is increased so that 60 amperes pass through the coke, and the temperature falls to and is maintained at  $650^\circ\text{C}$ . About 20 cubic metres of gas are produced per hour, consisting of carbon dioxide 30 per cent., carbon monoxide 0.5 per cent., hydrogen 63 per cent., methane 2.2 per cent., and nitrogen 4.3 per cent.

- 268,537. DYESTUFFS. W. G. Woodcock, H. A. E. Drescher, E. G. Beckett, J. Thomas, and Scottish Dyes, Ltd., Earl's Road, Grangemouth, Scotland. Application date, October 3, 1925.

1-amido-2-chloranthraquinone is prepared as described in Specification No. 264,916 (see THE CHEMICAL AGE, Vol. XVI, p. 262), and is purified by dissolving in 94 per cent. sulphuric acid and adding water to reduce the concentration down to 70 per cent. The purified product separates out as sulphate on cooling, and is boiled in water, filtered and washed. The product is dissolved in nitrobenzene and heated with anhydrous sodium acetate and copper powder. The melt is filtered hot, and then washed, yielding a blue dyestuff. Alternatively, the 1-amido-2-chloranthraquinone may be purified by recrystallisation from organic solvents. The sodium acetate may be replaced by soda ash and the nitrobenzene by naphthalene.

- 268,845. ACETIC ACID, MANUFACTURE OF. H. Dreyfus, 8, Waterloo Place, London, S.W.1. Application date, November 7, 1925.

It is known that acetic acid may be obtained by heating methyl alcohol and carbon monoxide under pressure in the presence of catalysts. It has now been found that the reaction will take place at atmospheric pressure in the presence of

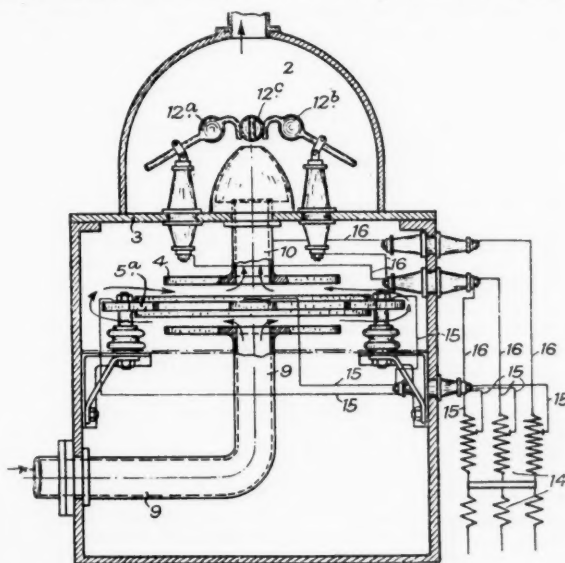
substances which are or are capable of forming acetates which split off acetic acid below  $400^\circ\text{C}$ . Such catalysts include copper oxide, tin oxide, lead oxide, copper acetate, zinc oxide, zinc acetate, zinc methylate, aluminium methylate or tin methylate, finely divided zinc, aluminium, or copper. The mixture of methyl alcohol and carbon monoxide vapour may be obtained by bubbling carbon monoxide through methyl alcohol at  $45^\circ$  to  $55^\circ\text{C}$ .

- 268,877. ARYLIDES OF ORTHOHYDROXY CARBOXYLIC ACIDS AND INTERMEDIATE PRODUCTS SUITABLE FOR THE PRODUCTION OF AZO DYESTUFFS, MANUFACTURE OF. British Synthetics, Ltd., and E. B. Higgins, Aldwych House, Aldwych, London, W.C.2. Application date, January 7, 1926.

The process is more particularly for the production of the anilide of 2:3-oxynaphthoic acid. It is known that if an amine reacts with an acid chloride, the reaction is quantitative with respect to the acid chloride but only to the extent of 50 per cent. with respect to the amine, due to the liberated hydrochloric acid forming hydrochloride of the amine. This could be avoided by adding alkali in small quantities to keep the reaction mixture just alkaline. In this invention, the acid chloride is diluted with an indifferent solvent, and the amine added in small quantities at a time with strong agitation. The acid chloride is thus always in excess so that the hydrochloride acid liberated is evolved as such. In an example 2:3-oxynaphthoyl chloride is heated with benzene to  $60^\circ\text{C}$ . and aniline is added gradually with agitation. A quantitative yield of anilide of 2:3-oxynaphthoic acid is obtained.

- 269,046. OZONISING AIR AND CONVERTING IT INTO NITRIC OXIDE, APPARATUS FOR. A. Negle, 36, Hohe Bleichen, Hamburg 36, Germany. Application date, August 30, 1926.

The ozoniser is arranged in an airtight casing and the air is delivered from it to another closed compartment containing



259,046

electric arcs which convert the ozonised air into pure nitric oxide. The two devices are connected to a multi-phase current of high tension and high frequency which produces a strong electric field in the ozoniser and a homogeneous arc field in the arc chamber. The voltage employed is about 12,500 and the frequency at least 350 cycles per second.

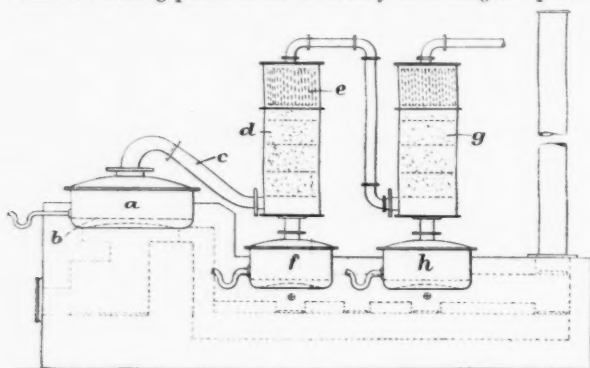
The ozonising chamber 1 and combustion chamber 2 are separated by a partition 3. Two electrode discs 4 are earthed,



and the opposite electrode 5a is composed of 3 insulated sectors having a covering on both sides of dielectric such as glass or mica. Air is admitted by a tube 9 and passes out between the lower disc 4 and disc 5a, and then inwards between the upper disc 4 and disc 5a to the outlet tube 10. The static electric field between the disc ozonises the air, and this is then subjected to a multiphase arc 12a, 12b, 12c, which completely converts it into nitric oxide. The current is supplied through a high voltage transformer 14, each phase being conducted by a cable 15 to a corresponding segment of the disc 5a, and by a cable 16 to the electric arc. The nitric oxide may be converted into nitrogen dioxide by mixing with air.

269,090. FRACTIONAL DISTILLATION. Thermal, Industrial and Chemical (T.I.C.) Research Co., Ltd., and W. J. Chadder, Allington House, Victoria Street, London, S.W.1. Application date, November 23, 1926.

The separate condensation of vapours and liquids of different boiling points is facilitated by increasing the partial



269,090

pressures of the vapour of the liquid of lower boiling point. This increase may be obtained by using as the receiving vessel for the fractions separated in a condenser a still heated to a temperature just below the boiling point of the constituent which it is desired to retain, and connecting the still to the condenser. To obtain a fraction of maximum purity, general or local overheating must be avoided, and in the invention this is done by collecting the fraction condensed in the dephlegmator and the scrubbing tower on the surface of molten metal. The large heat capacity of the latter prevents variations of the temperature.

In the application to the dehydration and/or distillation of tar, the tar is distilled in a primary still *a* which may contain a layer of molten metal *b*, in such a way that pitch alone remains. The vapour passes through a pipe *c* to a fractionator *d*, the lower part of which is filled with a scrubbing material over which flows the condensed liquor from the dephlegmator *e*. The condensate passes to a secondary still *f* which contains molten metal at a temperature slightly below the boiling point of the constituents to be separated, i.e., slightly below the temperature in the dephlegmator. The partial vapour pressure of any lighter constituent in the fractionator *d* is thus increased by its re-evaporation in the still *f* and this facilitates the removal of the lighter constituents. The vapours pass to another scrubbing tower *g* and still *h*.

NOTE.—Abstracts of the following specifications which are now accepted, appeared in THE CHEMICAL AGE when they became open to inspection under the International Convention:—241,221 (Koppers Co.), relating to gas purification and regenerating sulphided alkaline solutions, see Vol. XIII, p. 606; 245,716-7 (C. H. Wills), relating to production of steel, see Vol. XIV, p. 31 (Metallurgical Section); 246,127 (Soc. of Chemical Industry in Basle), relating to conversion of insoluble ureaformaldehyde condensation products into soluble products, see Vol. XIV, p. 310; 254,676 (E. Legeler and P. Esselmann), relating to continuous purification of crude carbon disulphide, see Vol. XV, p. 256; 255,103 (T. Goldschmidt Akt.-Ges.), relating to aluminium alloys having a high silicon content, see Vol. XV, p. 31 (Metallurgical Section); 255,411 (Compagnie des Mines de Vicoigne, Noeux, et Drocourt), relating to distillation of coal at low temperatures, see Vol. XV, p. 307; 256,225 (H. Hirzel), relating to alkyl and aralkyl resorcinols, see Vol. XV, p. 356.

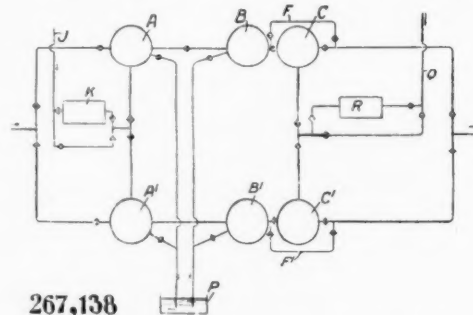
#### International Specifications not yet Accepted

266,697. SYNTHETIC TANNING AGENTS. I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, February 23, 1926.

Esters of *o*-oxyaryl-carboxylic acids are sulphonated under conditions which minimise hydrolysis of the products by the water produced in the reaction, by keeping the temperature high, and using the minimum quantity of sulphonating agent, such as chlorosulphonic, pyrosulphuric, or fuming sulphuric acid. Water-soluble tanning agents are obtained. The sulphonating process can be extended to the products obtained by heating oxyaryl-carboxylic acid sulphochlorides with oxyaryl or esterified oxyaryl compounds. Examples include the treatment of salol,  $\beta$ -naphthyl salicylate, acetyl-salicylic acid, and salicylosalicylic acid with chlor-sulphonic acid; salicylic acid may be heated with thionyl chloride and the product sulphonated with fuming sulphuric acid. Other products which may be sulphonated are those derived from a mixture of homosalicylic acids from crude cresol, and thionyl chloride; salicylic acid, toluene, and phosphorus oxychloride; salicylic acid sulphochloride and  $\beta$ -naphthol; cresotinic acid sulphochloride and salicylic acid; salicylic acid sulphochloride and polysalicylide.

267,138. DESULPHURISING GASES. Soc. Internationale des Procédés Prudhomme Houdry, 1, Avenue de Villars, Paris. International Convention date, March 4, 1926.

Two batteries of purifiers, A, B, C, and A<sup>1</sup>, B<sup>1</sup>, C<sup>1</sup> are used to permit regeneration. Purifiers A, A<sup>1</sup> are charged with

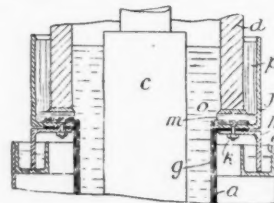


267,138

finely divided nickel oxides on a porous support, and purifiers B, B<sup>1</sup> with oxides of copper or iron. Purifiers C, C<sup>1</sup> are similar to A, A<sup>1</sup> if the gases contain steam, to absorb sulphuretted hydrogen, produced by the action of steam on the metallic sulphides produced in purifiers B or B<sup>1</sup>. Air is passed through a pipe J and heater K to purifier A or A<sup>1</sup>, and water gas with steam is passed through a pipe Q and heater R at 350° C. to purifiers B, C, or B<sup>1</sup>, C<sup>1</sup>. Sulphur dioxide from A or A<sup>1</sup> and sulphuretted hydrogen from B, C, or B<sup>1</sup>, C<sup>1</sup> are passed to a water vat P. If the gases do not contain steam, the purifiers C, C<sup>1</sup> may be shunted by pipes F, F<sup>1</sup>.

267,560. ELECTROLYSIS OF ALKALI CHLORIDES. E. Krebs, 15, Ovre Voldgate, Oslo. International Convention date, March 15, 1926.

A removable unit comprises a hood *d* carrying an anode *c*, and a permeable cathode *a* and diaphragm *g*. The cathode



267,560

is flanged and secured between the flanges of angle irons *h*, *j*, and the other flange of the iron *h* dips into a liquid seal *e*. A packing strip *o* and a frame *m* of insulating material such as "produrite" are secured between the hood *d* and iron *j*. The space *p* is filled with wax or ceresine.

## LATEST NOTIFICATIONS.

- 270,267. Process for tanning with metallic salts and salts of silicic acid. Rohm and Haas Akt.-Ges. April 30, 1926.
- 270,283. Process for the production of chlorthymol (1-methyl-3-oxy-4-isopropyl-6-chlor-benzol). Raschig, Dr. F. (firm of). April 29, 1926.
- 270,293. Process for producing solid materials in a state of fine dispersion. I. G. Farbenindustrie Akt.-Ges. April 28, 1926.
- 270,307. Dyeing textile goods. I. G. Farbenindustrie Akt.-Ges. April 27, 1926.
- 270,308. Manufacture of mordant dyestuffs. I. G. Farbenindustrie Akt.-Ges. April 27, 1926.
- 270,313. Conversion of hydrocarbons of high boiling-point into compounds of lower boiling-point. I. G. Farbenindustrie Akt.-Ges. May 1, 1926.
- 270,314. Conversion of hydrocarbons of high boiling-point into compounds of lower boiling-point. I. G. Farbenindustrie Akt.-Ges. May 1, 1926.
- 270,328. Process for dyeing with vat-dyestuffs. I. G. Farbenindustrie Akt.-Ges. April 29, 1926.
- 270,333. Treatment of fibrous materials and textiles. I. G. Farbenindustrie Akt.-Ges. January 21, 1925.
- 270,334. Treatment of fibrous materials and textiles. I. G. Farbenindustrie Akt.-Ges. January 21, 1925.
- 270,339. Manufacture of derivatives of substituted quinoline carboxylic acids. Soc. of Chemical Industry in Basle. April 30, 1926.
- 270,347. Protective layers for photographic films. I. G. Farbenindustrie Akt.-Ges. May 1, 1926.
- 270,348. Manufacture of dyestuffs. Soc. of Chemical Industry in Basle. April 30, 1926.
- 270,351. Manufacture of azo-dyestuffs. I. G. Farbenindustrie Akt.-Ges. May 3, 1926.
- 270,352. Manufacture of a yellow azo-dyestuff. I. G. Farbenindustrie Akt.-Ges. May 3, 1926.

## Specifications Accepted with Date of Application

- 246,126. Condensation products of urea, or a derivative thereof, and formaldehyde, Manufacture of. O. Y. Imray. (*Soc. of Chemical Industry in Basle.*) January 4, 1926.
- 246,501. Iodising pyridine derivatives, Process for. S. G. S. Dicker. (*Deutsche Gold- und Silber-Scheideanstalt vorm. Roessler.*) January 22, 1926.
- 246,842. 2-amino-5-iodopyridine, Process for the production of. C. Rath. January 26, 1926.
- 247,178. Simultaneous manufacture of methyl alcohol and liquid hydrocarbons by synthesis, Method for. G. Patart. February 7, 1925.
- 250,241. Nuclear alkylated or nucleal cyclo alkylated arylsulphonic acids. I. G. Farbenindustrie Akt.-Ges. April 1, 1925.
- 253,122. Synthetic production of ammonia, Process for. G. F. Uhde. June 4, 1925.
- 255,087. Chromium-magnesium preparations suitable for tanning purposes, Manufacture of. I. G. Farbenindustrie Akt.-Ges. July 10, 1925. Addition to 251,267.
- 255,884. Nickel catalyst, Manufacture of. I. G. Farbenindustrie Akt.-Ges. July 22, 1925.
- 256,970. Tanning processes. Mathieson Alkali Works. August 13, 1925.
- 258,575. Recovery of zinc by electrolytic deposition, Treatment of zinc-bearing ores for. Electrolytic Zinc Co. of Australasia, Ltd. September 17, 1925.
- 260,552. Converting alkali sulphides into alkali sulphites, Process for. West Virginia Pulp and Paper Co. October 29, 1925.
- 269,624. Chloride capable of reaction from pinene or purified turpentine oil, Process for the production of. F. Hohn. January 11, 1926.
- 269,625. Iron carbonyl, Manufacture and production of. J. Y. Johnson. (*I. G. Farbenindustrie Akt.-Ges.*) January 11, 1926.
- 269,647. Unsymmetrically acylated amino derivatives of aryl-arseno compounds, Manufacture of. G. Newbery and May and Baker, Ltd. January 19, 1926.
- 269,677. Pure iron, Manufacture and production of. J. Y. Johnson. (*I. G. Farbenindustrie Akt.-Ges.*) January 23, 1926.
- 269,711. Gas from oil or tar (hydrocarbons) or cracking oil or tar. K. N. Wannebo. March 16, 1926.
- 269,776. Purification of industrial zinc sulphate solutions preparatory to electrolysis. R. H. Stevens, G. C. Norris, and W. N. Watson. August 23, 1926.
- 269,777. Acid extraction of metals such as zinc and vanadium. R. H. Stevens, G. C. Norris, and W. N. Watson. August 23, 1926.

- 269,778. Removal of phosphorus from metal bearing solutions. R. H. Stevens, G. C. Norris, and W. N. Watson. August 23, 1926.
- 269,779-80. Vanadium from solutions, Recovery of. R. H. Stevens, G. C. Norris, and W. N. Watson. August 23, 1926.

## Applications for Patents

- Arnold, C. (Standard Development Co.). Treatment of heavy hydrocarbons. 11,746. May 2.
- Arnot, R., and Yava Works, Ltd. Preparation of condensation products from amines. 11,706. May 2.
- Bader, W., British Celanese, Ltd., and Green, S. J. Manufacture of organic compounds. 11,644. May 2.
- Bainbridge, E. G., British Dyestuffs Corporation, Ltd., and Payman, J. B. Intermediate compounds for preparation of dyestuffs. 11,709. May 2.
- Boedecker, F. Preparation of mono-ethyl ethers of protocatochuic aldehyde. 12,189. May 6. (Germany, January 24.)
- British Celanese, Ltd., and Ellis, G. H. Treatment of materials containing cellulose derivatives. 11,645. May 2.
- British Celanese, Ltd., and Celanese Corporation of America. Manufacture of textile fabrics. 12,178. May 6.
- Carpmael, W., and I. G. Farbenindustrie Akt.-Ges. Process of reducing aromatic amino compounds. 11,994. May 4.
- Carpmael, W., and I. G. Farbenindustrie Akt.-Ges. Manufacture of dyestuffs. 11,995, 11,997. May 4.
- Carpmael, W., and I. G. Farbenindustrie Akt.-Ges. Concentration of acetic acid solutions. 11,996. May 4.
- Chemische Fabrik auf Actien vorm. E. Schering. Manufacture of aminometalmercaptosulphonic acid, etc. 11,998. May 4. (Germany, May 5, 1926.)
- Chemische Fabrik L. van der Grinten. Manufacture of diazo-types. 11,846. May 3.
- Du Pont de Nemours and Co., E. I., and Nobel Industries, Ltd. Cellulose ester compositions. 12,128. May 5.
- Du Pont de Nemours and Co., E. I., and Nobel Industries, Ltd. Manufacture of folded strips, etc. 12,129. May 5.
- Enock, E. C., Enock, A. G., and Enock and Co., Ltd., A. G. Ammonia compressors. 12,241. May 6.
- Haglund, T. R. Production of aluminium oxide, etc. 11,737. May 2.
- Haglund, T. R. Production of aluminium oxide, etc. 11,855. May 3.
- I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacturing reduction products of vat dyestuffs, etc. 11,990. May 4.
- I. G. Farbenindustrie Akt.-Ges. Process of reducing aromatic amino compounds. 11,994. May 4.
- I. G. Farbenindustrie Akt.-Ges., and Imray, O. Y. Manufacture of dyestuffs. 12,125, 12,126. May 5.
- I. G. Farbenindustrie Akt.-Ges. Pulverulent fuels for internal-combustion engines. 11,656, 11,657. May 2. (Germany, May 7, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Conversion of hydrocarbons. 11,658. May 2. (Germany, May 7, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Production of hydrocarbons. 11,659. May 2. (Germany, May 10, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Protective layers for photographic films. 11,727. May 2. (Germany, May 1, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Manufacture of azo dyestuffs. 11,844, 11,845. May 3. (Germany, May 31, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Manufacture of photographic plates, etc. 11,980. May 4. (Germany, August 12, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Manufacture of naphthalene, etc., condensation products. 12,103. May 5. (Germany, June 30, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Process for protecting materials from moth. 12,104. May 5. (Germany, July 13, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Manufacture of catalysts. 12,124. May 5. (Germany, November 27, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Manufacture of catalysts. 12,240. May 6. (May 5.)
- I. G. Farbenindustrie Akt.-Ges. Production of colour lakes. 12,294. May 7. (Germany, May 10, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Production of soap-like preparations. 12,295. May 7. (Germany, May 15, 1926.)
- Macallum, A. D. Manufacture of diacetyl 3:3' diamino 4:4' dihydroxy 5:5' di-iodoarsenobenzene, etc. 12,003. May 4.
- May and Baker, Ltd., and Stickings, R. W. E. Manufacture of arylarsinic acids. 11,864. May 3.
- Meyerhofer, A. F. Production of soluble hydrates. 11,837. May 3. (Germany, May 19, 1926.)
- Pease, E. L. Manufacture of potassium phosphate, etc. 11,725. May 2.
- Permutit Akt.-Ges. Production of chromyl chloride. 11,805. May 3. (Germany, May 5, 1926.)
- Singer, R. Production of cellulose lacquers, etc. 11,738. May 2.
- Soc. of Chemical Industrie in Basle. Dyestuffs. 11,728. May 2. (Switzerland, April 30, 1926.)

## Weekly Prices of British Chemical Products

The prices and comments given below respecting British chemical products are based on direct information supplied by the British manufacturers concerned. Unless otherwise qualified, the figures quoted apply to fair quantities, net and naked at makers' works.

### General Heavy Chemicals

ACID ACETIC, 40% TECH.—£19 per ton.  
 ACID BORIC, COMMERCIAL.—Crystal, £34 per ton; powder, £36 per ton.  
 ACID HYDROCHLORIC.—3s. 9d. to 6s. per carboy d/d, according to purity, strength, and locality.  
 ACID NITRIC, 80° Tw.—£21 10s. to £27 per ton, makers' works, according to district and quality.  
 ACID SULPHURIC.—Average National prices f.o.r. makers' works, with slight variations up and down owing to local considerations: 140° Tw., Crude Acid, 60s. per ton. 168° Tw., Arsenical, £5 10s. per ton. 168° Tw., Non-arsenical, £6 15s. per ton.  
 AMMONIA ALKALI.—£6 15s. per ton f.o.r. Special terms for contracts.  
 BISULPHITE OF LIME.—£7 10s. per ton, packages extra, returnable.  
 BLEACHING POWDER.—Spot, £9 10s. per ton d/d; Contract, £8 10s. per ton d/d, 4-ton lots.  
 BORAX, COMMERCIAL.—Crystals, £19 10s. to £20 per ton; granulated, £19 per ton; powder, £21 per ton. (Packed in 2-cwt. bags, carriage paid any station in Great Britain.)  
 CALCIUM CHLORIDE (SOLID).—£5 to £5 5s. per ton d/d carr. paid.  
 COPPER SULPHATE.—£25 to £25 10s. per ton.  
 METHYLATED SPIRIT 61 O.P.—Industrial, 2s. 5d. to 2s. 10d. per gall.; pyridinised industrial, 2s. 7d. to 3s. per gall.; mineralised, 3s. 6d. to 3s. 10d. per gall.; 64 O.P., rd. extra in all cases; prices according to quantity.  
 NICKEL SULPHATE.—£38 per ton d/d.  
 NICKEL AMMONIA SULPHATE.—£38 per ton d/d.  
 POTASH CAUSTIC.—£30 to £33 per ton.  
 POTASSIUM BICHROMATE.—4½d. per lb.  
 POTASSIUM CHLORATE.—¾d. per lb., ex wharf, London, in cwt. kegs.  
 SALAMMONIAC.—£45 to £50 per ton d/d. Chloride of ammonia, £37 to £45 per ton, carr. paid.  
 SALT CAKE.—£3 15s. to £4 per ton d/d. In bulk.  
 SODA CAUSTIC, SOLID.—Spot lots delivered, £15 2s. 6d. to £18 per ton, according to strength; 20s. less for contracts.  
 SODA CRYSTALS.—£5 to £5 5s. per ton, ex railway depots or ports.  
 SODIUM ACETATE 97/98%.—£21 per ton.  
 SODIUM BICARBONATE.—£10 10s. per ton, carr. paid.  
 SODIUM BICHROMATE.—¾d. per lb.  
 SODIUM BISULPHITE POWDER, 60/62%.—£17 10s. per ton for home market, 1-cwt. drums included.  
 SODIUM CHLORATE.—2½d. per lb.  
 SODIUM NITRITE, 100% BASIS.—£27 per ton d/d.  
 SODIUM PHOSPHATE.—£14 per ton, f.o.r. London, casks free.  
 SODIUM SULPHATE (GLAUBER SALTS).—£3 12s. 6d. per ton.  
 SODIUM SULPHIDE CONC. SOLID, 60/65.—£13 5s. per ton d/d. Contract, £13. Carr. paid.  
 SODIUM SULPHIDE CRYSTALS.—Spot, £8 12s. 6d. per ton d/d. Contract, £8 10s. Carr. paid.  
 SODIUM SULPHITE, PEA CRYSTALS.—£14 per ton f.o.r. London, 1-cwt. kegs included.

### Coal Tar Products

ACID CARBOLIC CRYSTALS.—8½ to 9d. per lb. Crude 60's, 2s. 6d. to 2s. 8d. per gall.  
 ACID CRESYLIC 99/100.—2s. 8d. to 2s. 9d. per gall. Steady. 97/99.—2s. 1½d. to 2s. 3d. per gall. Pale, 95%, 2s. to 2s. 1½d. per gall. Dark, 1s. 9d. to 1s. 10d. per gall.  
 ANTHRACENE.—A quality, 2½d. to 3d. per unit. 40%, 3d. per unit.  
 ANTHRACENE OIL, STRAINED.—8d. to 8½d. per gall. Unstrained, 7½d. to 8d. per gall.; both according to gravity.  
 BENZOLE.—Crude 65's, 1s. 0½d. to 1s. 1½d. per gall., ex works in tank wagons. Standard Motor, 1s. 9d. to 2s. 2d. per gall., ex works in tank wagons. Pure, 1s. 8d. to 2s. 6d. per gall., ex works in tank wagons.  
 TOLUOLE.—90%, 1s. 9d. to 2s. 0½d. per gall. Firm. Pure, 1s. 10d. to 2s. 3½d. per gall.  
 XYLOL.—2s. to 2s. 4d. per gall. Pure, 3s. per gall.  
 CREOSOTE.—Cresylic, 20/24%, 10½d. per gall. Standard specification, 6½d. to 9d.; middle oil, 7½d. to 8d. per gall. Heavy, 8½d. to 9d. per gall. Salty, 7d. per gall. less 1½%.  
 NAPHTHA.—Crude, 8d. to 9d. per gall. according to quality. Solvent 90/160, 1s. 10d. to 1s. 11d. per gall. Solvent 95/160, 1s. 6d. to 1s. 7d. per gall. Solvent 90/190, 1s. 1½d. to 1s. 4d. per gall.  
 NAPHTHALENE CRUDE.—Drained Creosote Salts, £7 10s. per ton. Whipped or hot pressed, £8 10s. to £9 per ton.  
 NAPHTHALENE.—Crystals, £11 10s. to £13 10s. per ton. Quiet. Flaked, £12 10s. per ton, according to districts.  
 PITCH.—Medium soft, 70s. to 80s. per ton, according to district; nominal.  
 PYRIDINE.—90/140, 8s. 6d. to 13s. per gall. Nominal. 90/180, 5s. per gall. Heavy, 5s. to 8s. per gall.

### Intermediates and Dyes

In the following list of Intermediates delivered prices include packages except where otherwise stated:  
 ACID AMIDONAPHTHOL DISULPHO (1-8-2-4).—10s. 9d. per lb.  
 ACID ANTHRANILIC.—6s. per lb. 100%.  
 ACID BENZOIC.—1s. 9d. per lb.  
 ACID GAMMA.—4s. 9d. per lb.  
 ACID H.—3s. 3d. per lb. 100% basis d/d.  
 ACID NAPHTHIONIC.—1s. 6d. per lb. 100% basis d/d.  
 ACID NEVILLE AND WINTHER.—4s. 9d. per lb. 100% basis d/d.  
 ACID SULPHANILIC.—9d. per lb. 100% basis d/d.  
 ANILINE OIL.—7d. per lb. naked at works.  
 ANILINE SALTS.—7d. per lb. naked at works.  
 BENZALDEHYDE.—2s. 3d. per lb.  
 BENZIDINE BASE.—3s. 3d. per lb. 100% basis d/d.  
 BENZOIC ACID.—1s. 8½d. per lb.  
 o-CRESOL 29/31° C.—4d. per lb. Fair inquiry.  
 m-CRESOL 98/100%.—2s. 8½d. per lb. Only limited inquiry.  
 p-CRESOL 32/34° C.—2s. 8½d. per lb. Only limited inquiry.  
 DICHLORANILINE.—2s. 3d. per lb.  
 DIMETHYLANILINE.—2s. per lb. d/d. Drums extra.  
 DINITROBENZENE.—9d. per lb. naked at works. £75 per ton.  
 DINITROCHLOROBENZENE.—£84 per ton d/d.  
 DINITROTOLUENE.—48/50° C. 8d. per lb. naked at works. 66/68° C. 9d. per lb. naked at works.  
 DIPHENYLAMINE.—2s. 10d. per lb. d/d.  
 a-NAPHTHOL.—2s. per lb. d/d.  
 B-NAPHTHOL.—11d. to 1s. per lb. d/d.  
 a-NAPHTHYLAMINE.—1s. 3d. per lb. d/d.  
 B-NAPHTHYLAMINE.—3s. per lb. d/d.  
 o-NITRANILINE.—5s. 9d. per lb.  
 m-NITRANILINE.—3s. per lb. d/d.  
 p-NITRANILINE.—1s. 9d. per lb. d/d.  
 NITROBENZENE.—6d. per lb. naked at works.  
 NITRONAPHTHALENE.—1s. 3d. per lb. d/d.  
 R. SALT.—2s. 2d. per lb. 100% basis d/d.  
 SODIUM NAPHTHIONATE.—1s. 8½d. per lb. 100% basis d/d.  
 o-TOLUIDINE.—8d. per lb. naked at works.  
 p-TOLUIDINE.—2s. 2d. per lb. naked at works.  
 m-XYLIDINE ACETATE.—2s. 11d. per lb. 100%.

### Wood Distillation Products

ACETATE OF LIME.—Brown, £9 5s. per ton. Grey, £15 10s. per ton.  
 LIQUOR, 9d. per gall. 32° Tw.  
 CHARCOAL.—£6 15s. to £10 per ton, according to grade and locality.  
 IRON LIQUOR.—1s. 3d. per gall. 32° Tw. 1s. per gall. 24° Tw.  
 RED LIQUOR.—9d. to 1s. per gall. 16° Tw.  
 WOOD CREOSOTE.—1s. 9d. per gall. Unrefined.  
 WOOD NAPHTHA, MISCIBLE.—4s. to 4s. 3d. per gall., 60% O.P.  
 Solvent, 4s. 3d. per gall., 40% O.P.  
 WOOD TAR.—£4 to £5 10s. per ton and upwards, according to grade.  
 BROWN SUGAR OF LEAD.—£40 10s. per ton.

### Rubber Chemicals

ANTIMONY SULPHIDE.—Golden, 6½d. to 1s. 5½d. per lb., according to quality; Crimson, 1s. 4d. to 1s. 6d. per lb., according to quality.  
 ARSENIC SULPHIDE, YELLOW.—1s. 9d. per lb.  
 BARYTES.—£3 10s. to £6 15s. per ton, according to quality.  
 CADMIUM SULPHIDE.—2s. 6d. to 2s. 9d. per lb.  
 CARBON BISULPHIDE.—£20 to £25 per ton, according to quantity.  
 CARBON BLACK.—5½d. per lb., ex wharf.  
 CARBON TETRACHLORIDE.—£45 to £50 per ton, according to quantity, drums extra.  
 CHROMIUM OXIDE, GREEN.—1s. 1d. per lb.  
 DIPHENYLGUANIDINE.—3s. 9d. per lb.  
 INDIARUBBER SUBSTITUTES, WHITE AND DARK.—5½d. to 6½d. per lb.  
 LAMP BLACK.—£35 per ton, barrels free.  
 LEAD HYPOSULPHITE.—9d. per lb.  
 LITHOPONE, 30%.—£22 10s. per ton.  
 MINERAL RUBBER "RUBPRON".—£13 12s. 6d. per ton, f.o.r. London.  
 SULPHUR.—£9 to £11 per ton, according to quality.  
 SULPHUR CHLORIDE.—4d. to 7d. per lb., carboys extra.  
 SULPHUR PRECIP. B.P.—£47 10s. to £50 per ton.  
 THIOCARBAMIDE.—2s. 6d. to 2s. 9d. per lb. carriage paid.  
 THIOCARBANILIDE.—2s. 1d. to 2s. 3d. per lb.  
 VERMILION, PALE OR DEEP.—6s. to 6s. 3d. per lb.  
 ZINC SULPHIDE.—1s. per lb.



## Pharmaceutical and Photographic Chemicals

ACID, ACETIC, PURE, 80%.—£39 per ton ex wharf London in glass containers.

ACID, ACETYL SALICYLIC.—2s. 5d. to 2s. 6d. per lb. Firm and brisk.

ACID, BENZOIC B.P.—2s. to 2s. 3d. per lb., according to quantity. Solely ex Gum, 1s. 3d. per oz.; 500 oz. lots, 1s. per oz.

ACID, BORIC B.P.—Crystal, £41 per ton; powder, £45 per ton. Carriage paid any station in Great Britain, in ton lots.

ACID, CAMPHORIC.—19s. to 21s. per lb.

ACID, CITRIC.—1s. 5½d. to 1s. 7d. per lb., less 5%. Advancing.

ACID, GALLIC.—2s. 8d. per lb. for pure crystal, in cwt. lots.

ACID, PYROGALLIC, CRYSTALS.—7s. 3d. per lb. Resublimed, 8s. 3d. per lb.

ACID, SALICYLIC, B.P.—1s. 3½d. to 1s. 4d. per lb. Technical.—11½d. to 1s. per lb. Both in good demand.

ACID, TANNIC B.P.—2s. 9d. to 2s. 11d. per lb.

ACID, TARTARIC.—1s. 3d. per lb., less 5%. Firm market.

AMIDOL.—9s. per lb., d/d.

ACETANILIDE.—1s. 6d. to 1s. 8d. per lb. for quantities.

AMIDOPYRIN.—8s. 6d. per lb.

AMMONIUM BENZOATE.—3s. 3d. to 3s. 9d. per lb., according to quantity.

AMMONIUM CARBONATE B.P.—£37 per ton. Powder, £39 per ton in 5 cwt. casks. Resublimed: lump, 1s. per lb.; powder, 1s. 3d. per lb.

ATROPINE SULPHATE.—11s. per oz. for English make.

BARBITONE.—6s. 6d. per lb.

BENZONAPHTHOL.—3s. 3d. per lb. spot.

BISMUTH CARBONATE.—9s. 9d. to 10s. per lb.

BISMUTH CITRATE.—9s. 6d. to 9s. 9d. per lb.

BISMUTH SALICYLATE.—8s. 9d. to 9s. per lb.

BISMUTH SUBNITRATE.—7s. 9d. to 8s. per lb.

BISMUTH NITRATE.—5s. 9d. to 6s. per lb.

BISMUTH OXIDE.—13s. 9d. to 14s. per lb.

BISMUTH SUBCHLORIDE.—11s. 9d. to 12s. per lb.

BISMUTH SUBGALLATE.—7s. 9d. to 8s. per lb. Extra and reduced prices for smaller and larger quantities respectively; Liquor Bismuthi B.P. in W. Qts. 1s. 1d. per lb.; 12 W. Qts. 1s. per lb.; 36 W. Qts. 11½d. per lb.

BORAX B.P.—Crystal, £24 per ton; powder, £25 per ton. Carriage paid any station in Great Britain, in ton lots.

BROMIDES.—Potassium, 1s. 11d. to 2s. per lb.; sodium, 2s. 2d. to 2s. 3d. per lb.; ammonium, 2s. 4d. to 2s. 5d. per lb., all spot.

CALCIUM LACTATE.—1s. 3½d. to 1s. 4½d.

CHLORAL HYDRATE.—3s. 2d. to 3s. 5d. per lb., duty paid.

CHLOROFORM.—2s. 3d. to 2s. 7½d. per lb., according to quantity.

CREOSOTE CARBONATE.—6s. per lb.

ETHER METH.—1s. 1d. to 1s. 11½d. per lb., according to sp. gr. and quantity. Ether purif. (Aether B.P., 1914), 2s. 3d. to 2s. 4d., according to quantity.

FORMALDEHYDE.—£39 per ton, in barrels ex wharf.

GUAIACOL CARBONATE.—5s. per lb.

HEXAMINE.—2s. 4d. to 2s. 6d. per lb.

HOMATROPINE HYDROBROMIDE.—30s. per oz.

HYDRASTINE HYDROCHLORIDE.—English make offered at 120s. per oz.

HYDROGEN PEROXIDE (12 VOLS.).—1s. 4d. per gallon, f.o.r. makers' works, naked.

HYDROQUINONE.—4s. per lb., in cwt. lots.

HYPOPHOSPHITES.—Calcium, 3s. 6d. per lb., for 28-lb. lots; potassium, 4s. 1d. per lb.; sodium, 4s. per lb.

IRON AMMONIUM CITRATE B.P.—2s. 1d. to 2s. 4d. per lb. Green, 2s. 4d. to 2s. 9d. per lb. U.S.P., 2s. 2d. to 2s. 5d. per lb.

IRON PERCHLORIDE.—22s. per cwt., 112 lb. lots.

MAGNESIUM CARBONATE.—Light Commercial, £33 per ton net.

MAGNESIUM OXIDE.—Light commercial, £67 10s. per ton, less 2½%; Heavy Commercial, £22 per ton, less 2½%; in quantity lower; Heavy Pure, 2s. to 2s. 3d. per lb., in 1 cwt. lots.

MENTHOL.—A.B.R. recrystallised B.P., 18s. 3d. per lb. net; Synthetic, 10s. 6d. to 12s. per lb., according to quantity; Liquid (95%), 12s. per lb.; Detached Cryst., 14s. 6d. per lb.

MERCURIALS B.P.—Up to 1 cwt. lots, Red Oxide, 7s. 6d. to 7s. 7d. per lb., levig., 7s. to 7s. 1d. per lb.; Corrosive Sublimate, Lump, 5s. 9d. to 5s. 10d. per lb., Powder, 5s. 2d. to 5s. 3d. per lb.; White Precipitate, Lump, 5s. 11d. to 6s. per lb., Powder, 6s. to 6s. 1d. per lb., Extra Fine, 6s. 1d. to 6s. 2d. per lb.; Calomel, 6s. 4d. to 6s. 5d. per lb.; Yellow Oxide, 6s. 10d. to 6s. 11d. per lb.; Persulph., B.P.C., 6s. 1d. to 6s. 2d. per lb.; Sulph. nig., 5s. 10d. to 5s. 11d. per lb. Special prices for larger quantities.

METHYL SALICYLATE.—1s. 9d. per lb.

METHYL SULPHONAL.—11s. per lb.

METOL.—11s. per lb. British make.

PARAFORMALDEHYDE.—1s. 9d. per lb. for 100% powder.

PARALDEHYDE.—1s. 4d. per lb.

PHENACETIN.—3s. per lb.

PHENAZONE.—4s. 6d. per lb.

PHENOLPHTHALEIN.—6s. to 6s. 3d. per lb.

POTASSIUM BITARTRATE 99/100% (Cream of Tartar).—97s. per cwt. less 2½% for ton lots.

POTASSIUM CITRATE.—1s. 11d. to 2s. 2d. per lb.

POTASSIUM FERRICYANIDE.—1s. 9d. per lb., in cwt. lots.

POTASSIUM IODIDE.—16s. 8d. to 17s. 5d. per lb. for 1 cwt. lots.

POTASSIUM METABISULPHITE.—6d. per lb., 1-cwt. kegs included, f.o.r. London.

POTASSIUM PERMANGANATE.—B.P. crystals, 6d. per lb., spot.

QUININE SULPHATE.—2s. per oz., 1s. 8d. to 1s. 9d. for 1000 oz. lots in 100 oz. tins.

RESORCIN.—4s. per lb., spot.

SACCHARIN.—55s. per lb. Very limited inquiry.

SALOL.—2s. 4d. per lb.

SODIUM BENZOATE, B.P.—1s. 10d. to 2s. 2d. per lb.

SODIUM CITRATE, B.P.C., 1911.—1s. 8d. to 1s. 11d. per lb., B.P.C., 1923.—2s. to 2s. 1d. per lb. for 1 cwt. lots. U.S.P., 1s. 11d. to 2s. 2d. per lb., according to quantity.

SODIUM FERROCYANIDE.—4d. per lb., carriage paid.

SODIUM HYPOSULPHITE, PHOTOGRAPHIC.—£15 5s. per ton, d/d consignee's station in 1-cwt. kegs.

SODIUM NITROPRUSSIDE.—16s. per lb.

SODIUM POTASSIUM TARTRATE (ROCHELLE SALT).—90s. to 95s. per cwt. Crystals, 5s. per cwt. extra.

SODIUM SALICYLATE.—Powder, 1s. 9d. to 1s. 10d. per lb. Crystal, 1s. 10d. to 1s. 11d. per lb.

SODIUM SULPHIDE, PURE RECRYSTALLISED.—10d. to 1s. 2d. per lb.

SODIUM SULPHITE, ANHYDROUS, £27 10s. to £28 10s. per ton, according to quantity; 1-cwt. kegs included.

SULPHONAL.—7s. 6d. per lb.

TARTAR EMETIC, B.P.—Crystal or powder, 2s. 1d. to 2s. 2d. per lb.

THYMOL.—Puriss., 11s. to 12s. per lb., according to quantity. Firmer. Natural, 14s. 9d. per lb. Cheaper.

## Perfumery Chemicals

ACETOPHENONE.—7s. 3d. per lb.

AUBEPINE (EX ANETHOL), 10s. 6d. per lb.

AMYL ACETATE.—2s. per lb.

AMYL BUTYRATE.—5s. 3d. per lb.

AMYL SALICYLATE.—3s. per lb.

ANETHOL (M.P. 21/22° C.).—5s. 6d. per lb.

BENZYL ACETATE FROM CHLORINE-FREE BENZYL ALCOHOL.—2s. per lb.

BENZYL ALCOHOL FREE FROM CHLORINE.—2s. per lb.

BENZALDEHYDE FREE FROM CHLORINE.—2s. 6d. per lb.

BENZYL BENZOATE.—2s. 3d. per lb.

CINNAMIC ALDEHYDE NATURAL.—17s. per lb.

COUMARIN.—10s. 6d. per lb.

CITRONELLOL.—14s. 6d. per lb.

CITRAL.—8s. 3d. per lb.

ETHYL CINNAMATE.—10s. per lb.

ETHYL PHTHALATE.—2s. 9d. per lb.

EUGENOL.—9s. per lb.

GERANIOL (PALMAROSA).—17s. 6d. per lb.

GERANIOL.—6s. 6d. to 10s. per lb.

HELIOTROPINE.—4s. 9d. per lb.

ISO EUGENOL.—13s. 6d. per lb.

LINALOL.—Ex Bois de Rose, 15s. per lb. Ex Shui Oil, 10s. 6d. per lb.

LINALYL ACETATE.—Ex Bois de Rose, 18s. per lb. Ex Shui Oil, 14s. 6d. per lb.

METHYL ANTHRANILATE.—8s. 6d. per lb.

METHYL BENZOATE.—4s. 6d. per lb.

MUSK KETONE.—35s. per lb.

MUSK XYLOL.—8s. 6d. per lb.

NEROLIN.—3s. 9d. per lb.

PHENYL ETHYL ACETATE.—10s. 6d. per lb.

PHENYL ETHYL ALCOHOL.—11s. per lb.

RHODINOL.—27s. 6d. per lb.

SAFROL.—1s. 6d. per lb.

TERPINEOL.—1s. 6d. per lb.

VANILLIN.—18s. 6d. per lb. Good demand.

## Essential Oils

ALMOND OIL.—10s. 3d. per lb.

ANISE OIL.—3s. 1d. per lb.

BERGAMOT OIL.—30s. per lb.

BOURBON GERANIUM OIL.—13s. per lb.

CAMPHOR OIL.—67s. 6d. per cwt.

CANANGA OIL, JAVA.—26s. per lb.

CINNAMON OIL LEAF.—6d. per oz.

CASSIA OIL, 80/85%.—8s. 6d. per lb.

CITRONELLA OIL.—Java, 85/90%, 2s. 1d. per lb. Ceylon, pure, 1s. 10d. per lb.

CLOVE OIL.—6s. per lb.

EUCALYPTUS OIL, 70/75%.—2s. per lb.

LAVENDER OIL.—Mont Blanc, 38/40%, Esters, 21s. per lb.

LEMON OIL.—8s. 9d. per lb.

LEMONGRASS OIL.—4s. 6d. per lb.

ORANGE OIL, SWEET.—10s. 6d. per lb.

OTTO OF ROSE OIL.—Anatolian, 30s. per oz. Bulgarian, 70s. per oz.

PALMA ROSA OIL.—9s. 6d. per lb.

PEPPERMINT OIL.—Wayne County, 16s. 9d. per lb. Japanese, 8s. per lb.

PETITGRAIN OIL.—7s. 9d. per lb.

SANDALWOOD OIL.—Mysore, 26s. 6d. per lb.; 90/95%, 16s. 6d. per lb.

## London Chemical Market

The following notes on the London Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. R. W. Greeff & Co., Ltd., and Messrs. Chas. Page & Co., Ltd., and may be accepted as representing these firms' independent and impartial opinions.

London, May 12, 1927.

BUSINESS has been rather quiet during the past week, and markets are without special feature. Prices on the whole, however, are remarkably firm, and any changes are almost invariably in an upward direction. There is little doing in the export markets.

### General Chemicals

ACETONE is in good demand, and the price is firm at about £61 to £63 per ton.

ACID ACETIC is unchanged.

ACID CITRIC is firmer at 1s. 4½d. to 1s. 5d. per lb., and a further advance in price is expected.

ACID FORMIC is in steady demand at about £46 to £49 per ton, according to quantity and position.

ACID LACTIC is unchanged at £43 per ton for 50% by weight.

ACID OXALIC is in steady demand, price about £27 to £28 per ton.

ACID TARTARIC makers have advanced their price to 1s. 4½d. per lb., but second-hand stuff is available at about 1d. per lb. less.

ALUMINA SULPHATE is quietly steady at about £6 5s. per ton for 17-18%.

AMMONIUM CHLORIDE.—The market is lifeless and the price nominally about £19 per ton.

COPPER SULPHATE is in good demand at about £25 per ton.

CREAM OF TARTAR is higher in price at £98 to £99 per ton.

EPSOM SALTS.—The market is firm at about £5 5s. per ton.

FORMALDEHYDE is quietly steady at about £41 per ton.

LEAD ACETATE is slow of sale, buyers holding off in consequence of the weakness of the metal. Price about £44 to £45 per ton for white and £42 for brown.

METHYL ACETONE is firm at £60 per ton.

METHYL ALCOHOL.—Unchanged at £46 per ton.

POTASSIUM CHLORATE.—Little business is reported; price about 3½d. per lb.

POTASSIUM PERRMANGANATE is firmer and inclined to advance in price, to-day's figure being 8d. per lb. for high-grade material.

SODA ACETATE is a firm market at £18 5s. to £18 10s. per ton.

SODA BICROMATE is firmer and remains in good demand.

SODA HYPOSULPHITE is unchanged.

SODA PRUSSATE is very firm at 4½d. per lb.

SODA SULPHIDE.—Unchanged.

ZINC SULPHATE.—Unchanged.

### Coal Tar Products

The coal tar product market is rather quiet, with little change to report since last week.

90'S BENZOL is quoted at 1s. 6½d. per gallon on rails, and the motor quality is worth about 1s. 5½d. per gallon on rails.

PURE BENZOL is worth about 1s. 10d. per gallon on rails.

CREOSOTE OIL is quoted at 7d. to 7½d. per gallon on rails in the North, while the price in London is from 8½d. to 8¾d. per gallon.

CRESYLIC ACID is very firm, the pale quality 97/99% being quoted at 2s. 2d. per gallon on rails, while the dark quality 95/97% is worth about 2s. 1d. per gallon.

SOLVENT NAPHTHA is unchanged at 1s. 2d. per gallon on rails.

HEAVY NAPHTHA is quoted at 1s. 2d. per gallon on rails.

NAPHTHALENES are unchanged, the 76/78 quality being quoted at £8 5s. to £8 15s. per ton, while the 71/76 quality is worth £7 10s. to £8 per ton.

PITCH is unchanged, supplies are limited, and the demand is not strong. The price remains unchanged at 70s. to 75s. f.o.b. U.K. ports.

### Latest Oil Prices

LONDON, May 11.—COTTONSEED steady but quiet. Bombay, May-June, to Hull, £9 2s. 6d., sellers; Egyptian black, May, to Hull, £9 18s. 9d.; June, £10 1s. 3d., paid and sellers; July, £10 3s. 9d., sellers; Sakellaridis, May, £9 8s. 9d.; June, £9 11s. 3d.; July, £9 13s. 9d., sellers. LINSEED OIL quiet and 2s. 6d. lower. Spot, £32 15s., ex mill; May, £31 15s.; May-August, £32 2s. 6d.; September-December, £33 7s. 6d. RAPE OIL inactive. Crude extracted, £44 10s.; technical refined, £46 10s. COTTON OIL firm. Refined common edible, £42; Egyptian crude, £36; deodorised, £44. TURPENTINE quiet and 3d. per cwt. lower. American, spot, 43s. 3d.; June, 43s. 6d.; and July-December, 34s. 9d.

### Nitrogen Products

*Export.*—During the last week the demand for sulphate of ammonia has continued, and sales have been made on the basis of £10 7s. 6d. per ton f.o.b. U.K. port. Mediterranean countries are still purchasing and reports from Central Europe indicate that the consumption will show no decrease on last year, despite the introduction of newer forms of nitrogen. There is little interest in the forward positions; both buyers and sellers seem to wait on the prices fixed by nitrate producers.

*Home.*—The demand continues brisk in several parts of the country, and it seems certain that consumption for the season will be in excess of that of last year, though the big losses due to the bad weather in early spring will not permit of the increase that was anticipated in certain quarters. Home prices remain unchanged, and it is now considered likely that the May price will operate also for the month of June.

*Nitrate of soda.*—The nitrate position remains unchanged with low stocks at European ports, but heavy stocks in Chile. As there will be a large drop in the price of nitrate, a better year's trade is expected. Moreover, the return to free selling will enliven the market. Already speculative offers have occurred of about £9 15s. per ton c.i.f. chief continental ports, but there seem no buyers at this price.

### Calcium Cyanamide

INTEREST in this fertiliser at the present time centres around its use for root crops and for the purpose of charlock destruction. As announced in last week's issue, the price for May is £9 16s. per ton for 4-ton lots, carriage paid to any railway station in Great Britain.

### The Chemists' Exhibition

A LARGER number of firms than ever before are represented at the Chemists' Exhibition, organised by the *British and Colonial Pharmacist*, at Holland Park Hall this week. The greater part of the floor space is devoted to toilet preparations and perfumes, but there is a representative display of such products as thymol, menthol, methyl salicylate, synthetic and fine chemicals.

Of particular interest is the stand of the Chiswick Chemical Works, who are said to be the sole manufacturers in this country of bromstyrol, of which a fine quality is exhibited. Butyric acid and butyric ether are among the products of this firm, who also exhibit a range of their commercial solvents, synthetics, and isolates, medicinal and concentrated floral oils.

Howards and Sons, Ltd., of Ilford, exhibit a range of solvents, including Sextol (cyclohexanol commercial), Sextone (cyclohexanone), Sextone "B" (methyl-cyclohexanone), Sextate (cyclohexanol acetate), and diacetone alcohol. Two plasticisers for cellulose ester lacquer, cyclohexanol phthalate and cyclohexanol oxalate, are also exhibited, as well as a new product, refined phellandrene, a base for a fine scent for soaps and perfumes.

Several stands are devoted to packing machinery, glassware, and measuring instruments.

EXPORTS OF INDIGO from British India amounted in February this year to 54 cwt., as compared with 295 cwt. in February, 1926. The exports included 33 cwt. to Persia and Mesopotamia, 4 cwt. to Egypt, and 17 cwt. to other countries.

A LIME SYMPOSIUM has been held by the Industrial Division of the American Chemical Society. A very large number of papers were read, dealing, among other things, with the use of lime in various industries (paper, beet sugar, tanning, agriculture, metallurgy), in water softening, etc.; with an X-ray study of various limes; with lime-kilns, rotary and shaft, etc.

INGENIOUS VALVES AND UNIONS which can be used at any angle in pipes are now being manufactured by Leonard Procter, 81 and 83, Kyrwick's Lane, Sparkbrook, Birmingham, and should prove of use where valves have to be fitted at awkward angles or where pipes not in alignment have to be connected. The principle used resembles a combination of the universal joint and the ball joint that is widely used on modern gramophones. The apparatus can be supplied made either of gun metal or brass, and tested for use either with water or with petrol.

## Scottish Chemical Market

The following notes on the Scottish Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. Charles Tennant and Co., Ltd., Glasgow, and may be accepted as representing the firm's independent and impartial opinions.

Glasgow, May 11, 1927.

BUSINESS in the heavy chemical market has again been moderately good during the past week. Prices remain steady, an exception being arsenic, which is rather weaker.

### Industrial Chemicals

ACID ACETIC.—98/100%, £55 to £67 per ton, according to quantity and packing, c.i.f. U.K. ports: 80% pure, £37 10s. per ton, ex wharf; 80% technical, £37 10s. per ton, ex wharf.

ACID BORIC.—Crystal, granulated or small flakes, £34 per ton; powder, £36 per ton, packed in bags, carriage paid U.K. stations.

ACID CARBOLIC, ICE CRYSTALS.—Rather quieter. Price now about 9d. per lb., f.o.b. U.K. ports.

ACID CITRIC, B.P. CRYSTALS.—British material unchanged at 1s. 5d. per lb., less 5%, f.o.b. U.K. ports. Continental still higher at about 1s. 5½d. per lb., less 5%, c.i.f. U.K. ports.

ACID HYDROCHLORIC.—Usual steady demand. Arsenical quality, 4s. 9d. per carboy. Dearsenicated quality, 6s. 3d. per carboy, ex works.

ACID NITRIC, 80%.—Quoted £23 5s. per ton, ex station, full truck loads.

ACID OXALIC.—Quoted 3d. per lb., ex store, spot delivery. On offer from the Continent at about 2½d. per lb., ex wharf.

ACID SULPHURIC, 144°.—£3 12s. 6d. per ton; 168°, £7 per ton, ex works, full truck loads. Dearsenicated quality, 20s. per ton more.

ACID TARTARIC, B.P. CRYSTALS.—Spot material on offer at 1s. 2½d. per lb., less 5%, ex store. Quoted 1s. 2½d. per lb., less 5%, c.i.f. U.K. ports, prompt shipment.

ALUMINA SULPHATE, 17/18%, IRON FREE.—Spot material quoted £5 12s. 6d. per ton, ex store. On offer for early delivery at £5 5s. per ton, c.i.f. U.K. ports.

ALUM POTASH.—Lump quality quoted £8 per ton, c.i.f. U.K. ports. Crystal powder, 5s. per ton less. Lump on spot, £9 per ton. Crystal powder, £8 10s. per ton, ex store.

AMMONIA ANHYDROUS.—Spot supplies now available at about 9½d. per lb., ex store, containers extra and returnable.

AMMONIA CARBONATE.—Lump, £37 per ton; powdered, £39 per ton, packed in 5-cwt. casks, delivered or f.o.b. U.K. ports.

AMMONIA LIQUID, 880°.—Unchanged at about 2½d. to 3d. per lb., delivered according to quantity.

AMMONIA MURIATE.—Grey galvanisers' crystals of English manufacture unchanged at about £23 to £24 per ton, ex station. Continental on offer at about £20 10s. per ton, c.i.f. U.K. ports. Fine white crystals quoted £18 5s. per ton, c.i.f. U.K. ports.

ARSENIC.—White powdered Cornish now quoted £18 5s. per ton, c.i.f., prompt despatch from mines. Spot material on offer at £19 5s. per ton, ex store.

BARIUM CARBONATE, 98/100%.—White powdered quality quoted £6 15s. per ton, c.i.f. U.K. ports.

BARIUM CHLORIDE, 98/100%.—Large white crystals on offer from the Continent at £7 12s. 6d. per ton, c.i.f. U.K. ports, packed in casks. Bags, 5s. per ton less. Spot material quoted £9 5s. per ton, ex store.

BARYTES.—English material unchanged at £5 5s. per ton, ex works. Continental quoted £5 per ton, c.i.f. U.K. ports.

BLEACHING POWDER.—Contract price to consumers, £8 per ton, ex station; minimum 4-ton lots. Spot material 10s. per ton extra. Continental now quoted £7 10s. per ton, c.i.f. U.K. ports.

BORAX.—Granulated, £19 10s. per ton; crystals, £20 per ton; powder, £21 per ton, carriage paid U.K. ports.

CALCIUM CHLORIDE.—English manufacturers' price unchanged at £5 to £5 5s. per ton, ex station. Continental dearer at about £3 17s. 6d. per ton, c.i.f. U.K. ports.

COPPERAS, GREEN.—Unchanged at about £3 10s. per ton, f.o.r. works, or £4 12s. 6d. per ton, f.o.b. U.K. ports for export.

COPPER SULPHATE.—British material unchanged at about £24 10s. per ton, f.o.b. U.K. ports. Continental again higher at about £24 15s. per ton, ex wharf.

FORMALDEHYDE, 40%.—Now offered from the Continent at £38 per ton, c.i.f. U.K. ports. Spot material available at £39 10s. per ton, ex store.

GLAUBER SALTS.—English material unchanged at £4 per ton, ex store or station. Continental now £2 17s. 6d. per ton, c.i.f. U.K. ports.

LEAD, RED.—Imported material rather higher at about £33 per ton, ex store.

LEAD, WHITE.—Quoted £33 5s. per ton, ex store.

LEAD ACETATE.—White crystals quoted £42 15s. per ton, c.i.f. U.K. ports; brown, about £40 5s. per ton, c.i.f. U.K. ports; white crystals on spot, quoted £44 5s. per ton, ex store.

MAGNESITE, GROUND CALCINED.—Quoted £8 10s. per ton, ex store, in moderate demand.

MAGNESIUM CHLORIDE.—Quoted £6 6s. 6d. per ton, c.i.f. U.K. ports.

POTASH CAUSTIC, 88/92%.—Solid quality quoted £28 15s. per ton, c.i.f. U.K. ports, minimum 15-ton lots. Under 15-ton lots, £29 10s. per ton. Liquid, £15 per ton, minimum 15-ton lots. Under 15-ton lots, £15 7s. 6d. per ton, c.i.f. U.K. ports.

POTASSIUM BICHROMATE.—Unchanged at 4½d. per lb., delivered.

POTASSIUM CARBONATE, 96/98%.—Quoted £27 5s. per ton, ex wharf, early shipment. Spot material on offer at about £28 10s. per ton, ex store.

POTASSIUM CHLORATE.—Powdered quality on offer at £24 5s. per ton, c.i.f. U.K. ports. Spot material, £2 per ton extra.

POTASSIUM NITRATE.—On offer from the Continent at about £20 15s. per ton, c.i.f. U.K. ports. Spot material now quoted £22 per ton, ex store.

POTASSIUM PERMANGANATE, B.P. CRYSTALS.—Quoted 6½d. per lb., ex store, spot delivery.

POTASSIUM PRUSSIAN, YELLOW.—In good demand and price unchanged at about 7½d. per lb., ex store, spot delivery. Offered from the Continent at 7½d. per lb., c.i.f. U.K. ports.

SODA CAUSTIC.—Powder, 98/99%, £19 7s. 6d. per ton; 76/77%, £15 10s. per ton; 70/72%, £14 10s. per ton, carriage paid station, minimum 4-ton lots on contract. Spot material, 10s. per ton extra.

SODIUM ACETATE.—English material quoted £22 5s. per ton, ex store. Some cheap continental lots on offer at about £18 5s. per ton, c.i.f. U.K. ports.

SODIUM BICARBONATE.—Refined recrystallised quality, £10 10s. per ton, ex quay or station. M.W. quality, 30s. per ton less.

SODIUM BICHROMATE.—Quoted 3½d. per lb., delivered buyers' works.

SODIUM CARBONATE (SODA CRYSTALS).—£5 to £5 5s. per ton, ex quay or station; powder or pea quality, £1 7s. 6d. per ton more; alkali, 58%, £8 12s. 3d. per ton, ex quay or station.

SODIUM HYPOSULPHITE.—Large crystals of English manufacture quoted £9 10s. per ton, ex store, minimum 4-ton lots. Continental on offer at about £8 2s. 6d. per ton, ex wharf, prompt shipment.

SODIUM NITRATE.—Ordinary quality quoted £13 per ton, ex store. Refined quality, 5s. per ton extra.

SODIUM NITRITE, 100%.—Spot material now quoted £20 5s. per ton, ex store.

SODIUM PRUSSIAN (YELLOW).—Offered for prompt shipment from the Continent at 4½d. per lb., ex wharf, spot material on offer at 4½d. per lb., ex store.

SODIUM SULPHATE (SALTCAKE).—Price for home consumption, £3 7s. 6d. per ton, ex works.

SODIUM SULPHIDE.—60/65%, solid, £11 10s. per ton; broken, £12 10s. per ton; cakes, £12 10s. per ton; flake, £14 5s. per ton; crystals, 31/34%, £17 15s. to £8 10s. per ton, according to quality, delivered buyers' works, minimum 4-ton lots, on contract. Prices for spot delivery are 5s. and 2s. 6d. per ton extra for solid and crystals respectively. Offered from the Continent at about £9 7s. 6d. per ton, c.i.f. U.K. ports, broken 15s. per ton extra.

SULPHUR.—Flowers, £12 10s. per ton; roll, £11 10s. per ton; rock, £11 10s. per ton; floristella, £10 10s. per ton; ground American, £9 5s. per ton, ex store. Prices nominal.

ZINC CHLORIDE.—British material, 98/100%, quoted £24 15s. per ton, f.o.b. U.K. ports; 98/100%, solid on offer from the Continent at about £21 15s. per ton, c.i.f. U.K. ports; powdered, 20s. per ton extra.

ZINC SULPHATE.—Continental material on offer at about £10 10s. per ton, ex wharf.

NOTE.—The above prices are for bulk business and are not to be taken as applicable to small parcels.

### Coal Tar Intermediates

ALPHA NAPHTHYLAMINE.—1s. 3d. per lb. Some inquiries.

GAMMA ACID.—5s. per lb. Some inquiries.

PARANITRANILINE.—1s. 8d. per lb. Small inquiries.

BENZALDEHYDE.—2s. 3d. per lb. Some inquiries.

SODIUM NAPHTHIONATE.—1s. 8½d. per lb. Some inquiries.

ORTHO TOLUIDINE.—8d. per lb. Some inquiries.

THE NEW ARTIFICIAL SILK WORKS at Cologne-Niel, Germany, which are being constructed by Courtaulds, Ltd., in co-operation with the Vereinigte Glanzstoff-Fabriken A.-G., will shortly be completed. According to a statement made recently by the chairman of the German company, the output will be such as to make important contributions to the European markets.



## Manchester Chemical Market

(FROM OUR OWN CORRESPONDENT.)

Manchester, May 12, 1927.

A QUIETLY steady demand for a number of the chief products has been met with on the Manchester chemical market this week, but there is plenty of room for improvement. Home trade consumers, in many instances, are not buying much more than is necessary to meet early requirements, and export demand on this market during the past week has also only been of moderate dimensions.

### Heavy Chemicals

There has been little change in the position of saltcake; values for this material are still between £3 10s. and £3 12s. 6d. per ton, with business still on relatively moderate lines. Sulphide of sodium is the turn easier on the week and the current demand is quiet; 60-65 per cent. concentrated solid is quoted at about £10 17s. 6d. per ton, and the ordinary commercial quality at from £8 5s. to £8 10s. Sales of bicarbonate of soda are on a fair scale and prices in this section are fully maintained at £10 10s. per ton. The demand for prussiate of soda is moderate, and although values have not altered much since last week at 4½d. per lb., the feeling is somewhat easier. Bleaching powder is held at about £8 per ton, and fair sales of this are being made. Glauber salts are currently quoted at round £3 7s. 6d. per ton, but the demand for this material shows little sign of expansion. In the case of hyposulphite of soda this meets with some inquiry, with about £15 10s. per ton being asked for photographic material and £9 5s. for commercial. Caustic soda continues to move off steadily, and values seem to be quite firm at from £14 10s. per ton for 60 per cent. quality to £16 10s. for 76 per cent., delivered to domestic consumers. Nitrite of soda has shown little alteration so far as prices are concerned, about £19 per ton still being quoted; a quiet demand is being experienced. Phosphate of soda is not attracting a great deal of attention, and prices are displaying some easiness at £12 7s. 6d. per ton. Chlorate of soda is on the quiet side, but values are fairly steady at from 3d. to 3½d. per lb. Alkali is fully maintained at round £6 15s. per ton, and a fair volume of inquiry is reported. Bichromate of soda is in moderate request and quotations are steady at 3½d. per lb.

Carbonate of potash meets with a quietly steady sale at round £26 10s. per ton. Caustic potash is also fairly active, and quotations are well held at about £30 10s. per ton. Chlorate of potash continues to be offered here at 3½d. per lb., but only a quiet business is being put through. Permanganate of potash is moving off in limited quantities at 6½d. per lb. for B.P. quality, and about 5d. for commercial. Bichromate of potash is still on offer at 4½d. to 4¾d. per lb., and a moderate business is reported. Yellow prussiate of potash is on the quiet side, and offers are at about 7½d. per lb.

Arsenic meets with a quiet demand, and white powdered, Cornish makes, are quoted at about £16 5s. per ton at the mines, in some cases slightly lower than this being asked. Sulphate of copper continues to display a firm tendency and up to £25 10s. per ton is being currently quoted, a moderate inquiry for this material being met with. Acetate of lime cannot be described as active, and prices are on the easy side at £15 7s. 6d. per ton for grey quality and £8 10s. for brown. Nitrate of lead is rather slow, but quotations are still in the neighbourhood of £39 per ton. Acetate of lead is only in moderate demand, with white on offer at about £43 10s. and brown at £41.

### Acids and Tar Products

Oxalic acid seems to have settled for the present at round 3d. per lb. and a quiet business is being done. There has only been a moderate call for citric acid, but firmness is still a feature of this product, current values being round 1s. 5½d. per lb. Tartaric acid is in quiet demand, and prices are well held at 1s. 2½d. per lb. A fairly steady trade in acetic acid is being done at about £67 per ton for glacial and £37 for 80 per cent. commercial material.

There is not much actual business passing in pitch, and prices are easy at about £3 12s. 6d. per ton. Carbolic acid is attracting much less attention than it was a week or two ago, and quotations are lower at 8d. to 8½d. per lb. for crystals. Solvent naphtha is still an inactive section at round 1s. 4d. per gallon. Creosote oil is in moderate request, and values are fairly steady at 7½d. per gallon.

## The Organisation of Chemists

To the Editor of THE CHEMICAL AGE.

SIR,—It is with great interest that I have noted the contents of the letter appearing in your columns from the National Organiser of the National Union of Drug and Chemical Workers dated April 25. The reply, however, must confine itself to a general consideration in regard to the relations between the Association and the Union.

The Union claims to represent upon its council retail, public service, industrial chemists, manufacturing and wholesale. Now it is evident that all the terms which apply to pharmacists are easy of interpretation, but the terms "public service," "industrial chemist" mean nothing definite for members of the profession of chemistry.

It appears evident, therefore, that the pharmaceutical interest greatly preponderates upon the council and within the Union's membership, and it would be interesting to know what percentage of its members either (1) hold a degree or diploma with chemistry as the principal subject, or (2) could satisfy the nominations committee of this Association that they have reached a degree of competency in the theory and practice of chemistry equivalent to (1) (qualification B).

This is not to say that the Union does not perform a useful and important work, but it remains true that that work is applicable to the profession of pharmacy and not to that of chemistry.

It was in this sense and with no intent to slight the Union or the profession of pharmacy that the Association, which regards both with friendship and respect, must reassert that unification is neither possible nor desirable: but the possibility of setting up a joint council is another question which might profitably be explored, providing it is clearly understood that the professions of chemistry and pharmacy are absolutely distinct, and that any attempt to join them in one organisation is impossible.

Regarding the question from this point of view, it seems unnecessary to discuss in detail the specific points raised by your correspondent, since the method of organisation of the two societies must necessarily develop along different lines. The Association, however, would be genuinely interested to know what qualifications are demanded by the Union for "qualified chemists," by what means it has succeeded in enforcing a minimum salary of £400 per annum, and what percentage of its members are in receipt of this salary.—I am, etc.,

HY. T. F. RHODES, General Secretary,

"Empire House," British Association of Chemists,  
175, Piccadilly,  
London.

## The Berthelot Centenary Celebrations

THE official celebrations of the centenary of the birth of Marcelin Berthelot began on Friday, May 6, with a ceremony at the Sorbonne, Paris, in the evening, during which M. Poincaré and M. Painlevé, Minister of War, paid tributes to the genius of their countryman. The Government was also represented by MM. Briand, Leygues (Minister of Marine), and Tardieu (Minister of Public Works). The object of the meeting was to open a national subscription for the foundation of an Institute of Chemistry, which, equipped with a comprehensive library and up-to-date laboratories for the study of all branches of chemistry, will be available to the scientists of all countries.

## Clyno Dual-Purpose Saloon

THE Clyno Engineering Co. are putting on the market an entirely new innovation in the shape of the Clyno dual-purpose saloon car. The Clyno saloon can be converted in less than five minutes into a convenient business-like commercial traveller's car. This change is effected easily and quickly by the substitution of shelves—giving facilities for a load up to 3 cwt.—in place of the usual back seat squabs. When the week-end comes the shelves can be removed and the back seat squabs replaced and the saloon bears absolutely no traces of its week-day activities. The owner thus has for pleasure a saloon car and for business a neat, efficient commercial car.



## Company News

**LEWIS BERGER AND CO.**—A dividend of 10 per cent. per annum, less tax at 4s., is announced.

**BRITISH OIL AND GUANO CO.**—A dividend of 7½d. per share, less tax, is announced. For the year 1925-26 no dividend was paid.

**ALLEN-LIVERSIDGE.**—A dividend at the rate of 6½ per cent. per annum (less tax) for the six months ended April 30, has been declared on the preference shares.

**VENO DRUG CO.**—The report for the year ended January 31, 1927, states that profits brought in from trading and general income, etc., for the year, after providing for all administration and management expenses, amount to £96,118, from which has to be deducted taxation and provision therefor, £15,533, leaving £80,585. Adding balance brought forward, £5,572, there is £86,157. The directors have transferred to special reserve £20,000, written off preliminary expenses £7,342, and recommend a dividend on the deferred ordinary shares of 3d. per share, less tax, leaving to carry forward £3,215.

**ASSOCIATED LEAD MANUFACTURERS, LTD.**—The profit for the year ended December 31 last, after providing for head office and other expenses, and after deduction of income tax, amounts to £65,078. To this must be added the balance from last year of £49,831, making a total of £114,909. Deducting interest on secured notes, etc., less interest received, £9,484, and the dividend on the cumulative preference shares, amounting to £46,238, leaves a balance of £59,187. The directors propose to write off the preliminary expenses, £8,973. With regret, they recommend that no dividend be paid on the ordinary share capital, and that the balance of £50,213 be carried forward. The report states that the losses and disorganisation caused by the coal strike and the increasing severity of foreign competition have seriously affected the trading results for the year. This fact has unfortunately obscured the advantages, which would otherwise have been apparent, arising out of the continual work which has been done to reduce not only the first cost of the company's manufactures, but also the cost of administrative organisation. The annual meeting will be held at Winchester House, London, on May 17, at 2.30 p.m.

## Tariff Changes

**PERU.**—An Executive Resolution just issued adds acid phosphates for use in the sugar industry to the list of articles for industrial use, which, by the ruling of September, 1923, may be cleared through the Customs Houses of the Republic with a duty of 10 per cent. *ad valorem*, provided they are imported in uniform quantities exceeding 500 kg.

**AUSTRIA.**—As a result of the termination of the Commercial Treaty between Austria and Czecho-Slovakia, the duties on formic acid; caustic potash, solid or in solution; sulphite and bisulphite of soda; potato starch; starch gum; synthetic tanning materials not specially mentioned; sulphide of zinc and Griffith's white; and crayons imported into Austria will be increased and payable at the Austrian "General" Tariff rates, except in cases where lower rates have been fixed by other treaties between Austria and other countries.

**POLAND.**—In virtue of a recent Order, the period during which nitrate of calcium may be imported into Poland without payment of duty has been extended for a further three months until June 30.

**SIAM.**—Under the new Customs and Excise Tariff which came into operation on March 27, imported benzene is subject to a duty of 20 satangs per gallon of 4.546 litres; kerosene to 10 satangs per gallon. On sugar, including glucose, but not including saccharine, there is an import duty of 3 satangs per kg. All articles not mentioned in the list of exemptions are subject to a duty of 5 per cent. *ad valorem*. Quinine and other alkaloids of cinchona are on the list of exemptions and may be imported free of duty.

## New Chemical Trade Marks

### Applications for Registration

*This list has been specially compiled for us by Gee & Co., Patent and Trade Mark Agents, Staple House, 51 and 52, Chancery Lane, London, W.C.2, from whom further information may be obtained, and to whom we have arranged to refer any inquiries relating to Patents, Trade Marks and Designs.*

*Opposition to the Registration of the following Trade Marks can be lodged up to June 11, 1927.*

"QUEPRIC."

479,322. Class 1. Chemical substances used in manufactures, photography or philosophical research and anti-corrosives. Joseph Crosfield and Sons, Ltd., Bank Quay, Warrington, Lancashire; soap manufacturers. March 31, 1927. (To be Associated. Sect. 24.)

"STORROL."

478,693. Class 1. Paints, pigments, varnishes, enamels in the nature of paints, preservative and anti-corrosive oils. Storrie Smithson and Co., Ltd., Bankside Works, Bankside, Sculcoates, Hull; paint and colour manufacturers. March 11, 1927. (To be Associated. Sect. 24.)

"ADVITA."

478,190. Class 3. Chemical substances prepared for use in medicine and pharmacy. Lever Brothers, Ltd., Port Sunlight, Cheshire; soap manufacturers. February 24, 1927. (To be Associated. Sect. 24.)

"TISO."

470,971. Class 1. Chemical substances being products of titanium for use in manufactures and dyes. Anglo-American Steel Co., Ltd., 66, Victoria Street, London, S.W.1; manufacturers. June 29, 1926.

## Chemical Trade Inquiries

*The following inquiries, abstracted from the "Board of Trade Journal," have been received at the Department of Overseas Trade (Development and Intelligence), 35, Old Queen Street, London, S.W.1. British firms may obtain the names and addresses of the inquirers by applying to the Department (quoting the reference number and country), except where otherwise stated.*

**METAL ALLOYS.**—A well-known firm in Japan wishes to be put in touch with any producers of new alloys in the United Kingdom who may be willing to negotiate for the right to manufacture such alloys in Japan on a royalty basis. (Reference 23060/27.)

**VARNISHES AND ENAMELS.**—The Administration of South African Railways and Harbours is inviting tenders, to be presented by June 23, for the supply and delivery of varnishes and enamels to meet the requirements of the railways for a period of one, two or three years, commencing January 1, 1928. (Reference B.X. 3499.)

**COAL TAR.**—A firm in Athens desires to obtain direct offers from the United Kingdom for coal tar in drums, for the purpose of spraying a road approximately six kilometres long and three metres wide. (Reference B.X. 3511.)

**CHEMICALS, VEGETABLE OILS, ESSENCES, ETC.**—A British firm established in Cairo desire to obtain the representation of British manufacturers. (Reference No. 492.)

## Magnesium Salts Production in U.S.

THE production of magnesium salts from natural sources in 1926 in the United States was 76,560,000 lb., valued at \$1,040,800, according to the Bureau of Mines, Department of Commerce. This is a decrease of 10 per cent. in quantity and 17 per cent. in value as compared with the production in 1925. Four companies produced 52,569,000 lb. of magnesium chloride, valued at \$701,580, from bitterns. Of this quantity 45,630,000 lb. was solid chloride, which sold at \$0.0148 a lb., and 6,939,000 lb. was in liquid form from 23° to 36° Baume, which sold at \$0.0039 a lb. Three companies produced magnesium sulphate to the amount of 23,991,000 lb., which sold for \$0.0141 a lb. Ninety-seven per cent. of the sulphate was made from salt works bitterns and the balance from natural magnesium sulphate. Imports of magnesium compounds in 1926 were 29,997,410 lb., valued at \$293,079, an increase of over 5,500,000 lb. as compared with 1925. Exports of magnesia and manufactures in 1926 totalled 6,579,221 lb., valued at \$323,386, an increase of over 1,300,000 lb., as compared with 1925.

## Commercial Intelligence

The following are taken from printed reports, but we cannot be responsible for any errors that may occur.

### Mortgages and Charges

[NOTE.—The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every Company shall, in making its Annual Summary, specify the total amount of debts due from the Company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case the total debt, as specified in the last available Annual Summary, is also given—marked with an \*—followed by the date of the Summary, but such total may have been reduced.]

ALLIANCE (MANCHESTER), LTD., chemical dealers, etc. (M., 14/5/27.) Registered April 26, debenture, to Bank; general charge. \*Nil. March 25, 1927.

BEAUMONT GEE AND CO., LTD., Halifax, dyers and finishers. (M., 14/5/27.) Registered April 21, £3,500 mortgage and debenture, to J. W. Darwent, Brockleby House, Charles Street, Elland, company secretary; general charge. \*Nil. March 28, 1927.

FREERS MANUFACTURING CO., LTD., soap manufacturers. (M., 14/5/27.) Registered April 22, £2,500 debentures (filed under sec. 93 (3) of the Companies (Consolidation) Act, 1908), present issue £1,400; general charge.

MACLEANS, LTD., London, N.W., manufacturers of toilet specialties, etc. (M., 14/5/27.) Registered April 30, £300 debentures, part of £4,000; general charge. \*— January 11, 1927.

### Satisfaction

MARLEY HILL CHEMICAL CO., LTD., Newcastle-on-Tyne. (M.S., 14/5/27.) Satisfactions registered April 27, £3,000, part of amount registered January 4, 1921; and £1,000, part of amount registered February 1, 1921.

### Deed of Arrangement

TOLKIEN, Clifford Eustace, trading as C. TOLKIEN AND CO., Apollo Chemical Works, and Commercial Mill, Bolton Road, Blackburn, manufacturing chemist. (D.A., 14/5/27.) Filed May 6. Trustee: W. H. Marsden, 43, Preston New Road, Blackburn, I.A. Secured creditors, £150; liabilities unsecured, £6,245; assets, less secured claims, £4,267.

### London Gazette, &c.

#### Company Winding Up Voluntarily

BLEACHERS AND DYERS, LTD. (C.W.U.V., 14/5/27.) B. T. Crew, George Street West, Luton, Chartered Accountant, appointed liquidator, May 2. Meeting of creditors at the offices of the liquidator, on Tuesday, May 17, at 11.30 a.m. Creditors' claims by June 30.

### Receivership

THOMAS AND COMPANY (BURSLEM), LTD. (R., 14/5/27.) A. C. Hawkins, Incorporated Accountant, of 52, Liverpool Road, Stoke-on-Trent, was appointed receiver and manager on May 4, 1927, under powers contained in debenture dated January 6, 1926.

### New Companies Registered

V. O. N. CARBON PRODUCTS, LTD., High Street, Fenny Stratford, Bucks. Registered May 6. Nom. capital, £100 in £1 shares. Manufacturing, pharmaceutical, and analytical chemists, druggists, oil and colourmen. Directors: A. A. W. Valentin, J. C. Nagle.

JAMES JACKSON AND CO. (LONDON), LTD., "Major" Works, Major Road, Bermondsey, London, S.E.16. Registered May 3. Nom. capital, £10,000 in £1 shares. Manufacturers of French polish, varnish, lacquers and paints, merchants and/or manufacturers of shellacs, glues, gums, dyestuffs, chemicals, drysaltery, etc. The permanent governing directors are:—J. C. Hart, A. C. Gray, H. P. Going.

THANET, LTD. Registered May 6. Nom. capital, £400 in £1 shares. Chemists, druggists, drysaltery, and colourmen, seed crushers, manufacturers of linseed oil, cotton, and other cakes, producers and distributors of petroleum, etc. Directors: E. J. Evershed, Thanet House, 7, Strand, London, W.C.2; W. J. Rand.

J. AND W. WHEWELL, LTD. Registered May 4. Nom. capital, £15,000 in £1 shares. To acquire the business of a chemical manufacturer carried on by J. B. Whewell at New Bridge Chemical Works, Radcliffe, Lancs. as "J. and W. Whewell." Directors:—J. B. Whewell, Grosvenor Mount, Hamilton Road, Whitefield, Lancs; W. Whewell, J. Whewell.

### Chemical Warfare: Discussion at Geneva

DURING the meeting of the Preparatory Commission on Disarmament at Geneva recently, a memorandum on the use of poison gas, bacteria, etc., in warfare was prepared by M. de Brouckère (Belgium), M. Kasprzycki (Poland), M. Yovanovitch (Poland), General Dumitrescu (Rumania), and M. Veverka (Czechoslovakia) for examination by the Governments alongside the first reading of the draft convention for disarmament, with a view to its inclusion in the draft at its second reading. This memorandum would commit the high contracting parties to refrain from the employment in war of asphyxiating or poisonous gases or the employment of bacteria in any manner. It would also pledge them not to permit the importation, exportation, or manufacture on their territory expressly for war purposes of substances usable in chemical or bacteriological warfare. Count Bernstorff (Germany), in expressing his gratification at seeing this proposal for the prohibition of chemical warfare, repeated the declaration that Germany was prepared to accept any international regulation providing for the abolition of the use of chemical substances in war. He considered it was also necessary to suppress the teaching of the processes of manufacture and the training of chemists for such work. Count Clauzel (France) also reminded the Commission that France had on several occasions definitely given support to the suppression of chemical warfare.

### Chemical Trade Returns for April

THE Board of Trade returns for the imports and exports of chemicals, drugs, dyes, and colours for April are as follows: imports, £1,458,517 (an increase of £123,740 on March, 1926); exports, £1,839,025 (an increase of £137,036); re-exports, £89,963 (a decrease of £5,986). For the four months ended April 30, 1927, the figures are: imports, £5,795,110 (an increase of £680,143); exports, £7,300,753 (a decrease of £580,765); re-exports, £297,552 (a decrease of £104,120). Full details will appear in the next issue of THE CHEMICAL AGE.

### Benn Brothers' Other Journals

THE CABINET MAKER.—Special Soft Goods Issue; Inside of a Mattress—XXX: Some Spring Types and a Woven Hair Production; Round the Soft Goods Trade; The Future of Textiles; Retail Advertising: A Square Mile of History.

THE ELECTRICIAN.—The I.E.E. Annual Meeting; "Radio Broadcast Coverage of City Areas," by Lloyd Espenschied; "The Electric Vehicle Position," by C. G. Conradi; "Cooled Anode Valves and Lives of Transmitting Valves," by W. J. Picken (I.E.E. Paper).

THE FRUIT GROWER.—Some Aspects of Fruit Research; Rabbits and Rooks Bill; Cider Competition at Long Ashton.

GARDENING ILLUSTRATED.—Hatfield and its Tudor Garden; Fruit in the Pleasure Garden; A Succession of Vegetables; Planting out Sweet Peas; The Rhododendron Show.

THE GAS WORLD.—Annual Coal Supplement; Particulars and Pictures of the first Waterless Gasholder erected in England; Examination Questions for Gas Students.

THE HARDWARE TRADE JOURNAL.—Trade topics for the Annual Trade Conference; Students' Note-Book; Brooms and Brushes; The Latest Government Contracts; New Hardware Selling Lines.

THE TIMBER TRADES JOURNAL.—Saturation of Deck Timber; Seasoning Shrinkage and Twist; Merits of the Beltless Drive.

